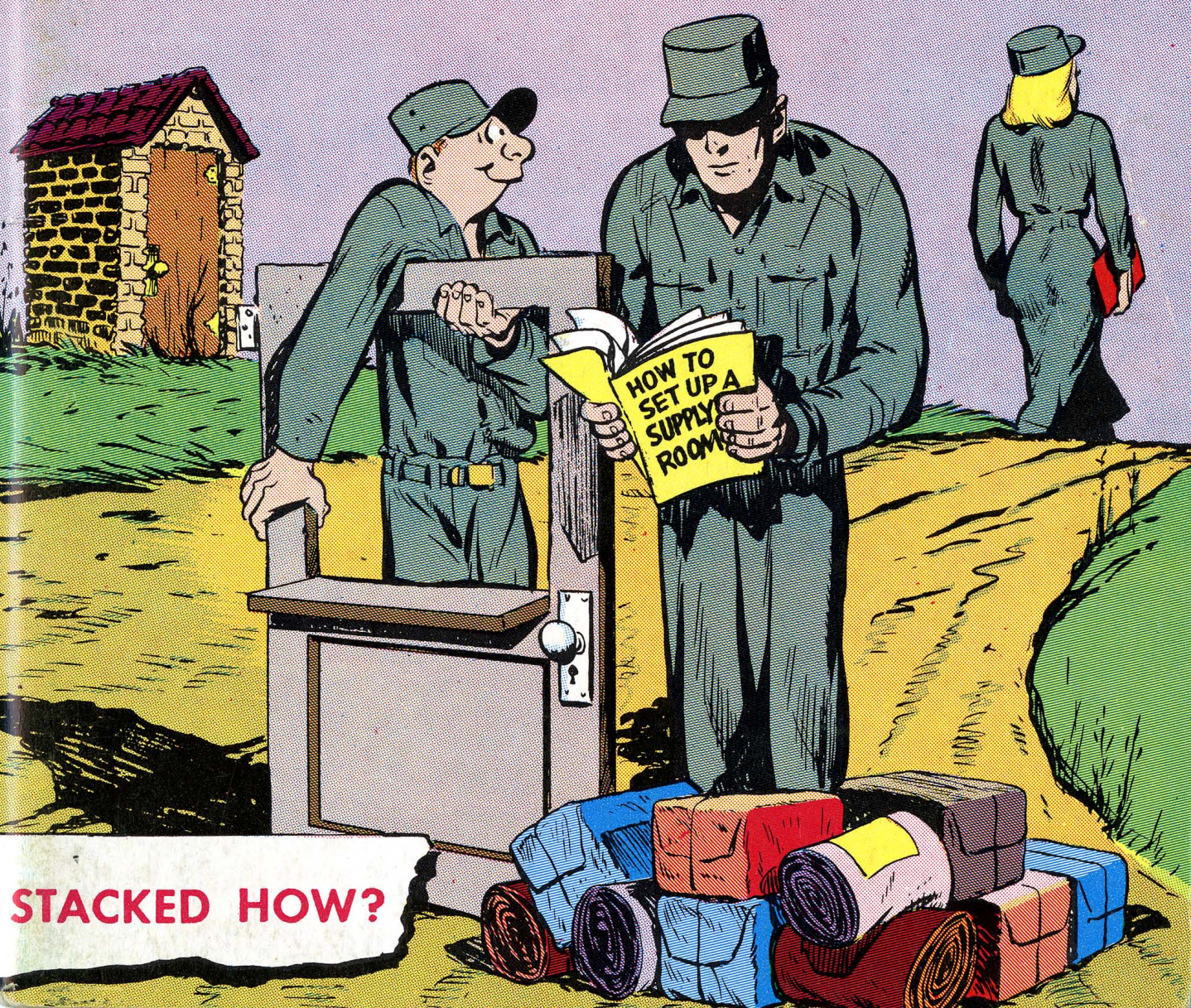
# PS

# TH PREVENTIVE MAINTENANCE MONTHLY

M48 TANK FEATURE pages 2-12

Issue 28

1955 Series




STACKED HOW?

Half-Mast Quotes Chapter and Verse on...

# CANNIBAL STEW

Dear Half-Mast,
What's the official poop on the cannibalization of vehicles? I know it's not good practice, but I'd like chapter and verse to make my point stick.
Sgt K. L.

Dear Sgt K. L.,

To clear the air let's start with a definition. SR 320-5-1 defines cannibalization as, "to remove serviceable parts from one item of equipment in order to install them on another item of equipment."

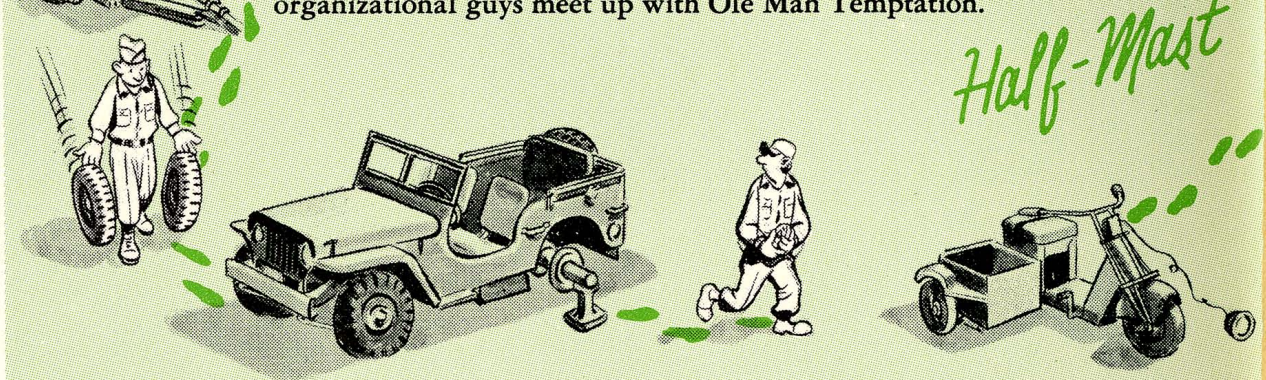
Now that we started quotations, let's go a step further and quote from Army Regulations AR 750-5, Section II, paragraph 5e as amended by Change 1 says, "Maintenance by cannibalization, that is, the removal of serviceable parts from one item of equipment for use in repairing another item of equipment will not be employed except—

"1. In extremely urgent cases in forward areas where contact with a supporting unit cannot be quickly established.

"2. As may be specifically authorized by the head of the technical service assigned depot maintenance responsibility for the equipment concerned or assigned maintenance responsibility when depot maintenance is the responsibility of another Department."

That's it, Brother. Taking parts from already deadlined vehicles to prevent more vehicles from hitting the deadline when you can't get parts is not good practice. And we should recite those two exceptions every time us organizational guys meet up with Ole Man Temptation.

Half-Mast



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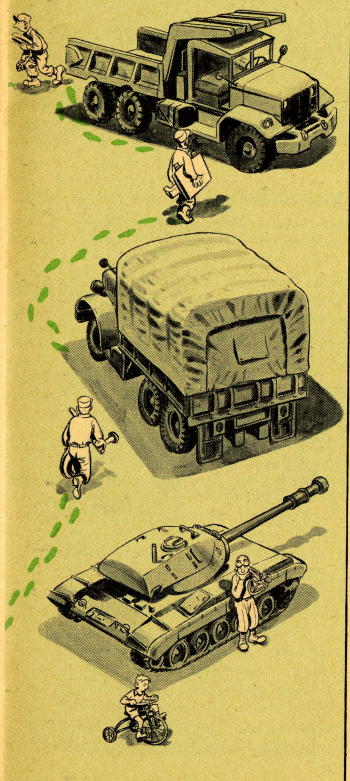

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PS Magazine wants your ideas and contributions, and is glad to answer your questions. Just write to: **Sgt Half-Mast, PS Magazine, Aberdeen Proving Ground, Maryland.** Names and addresses are kept in confidence.

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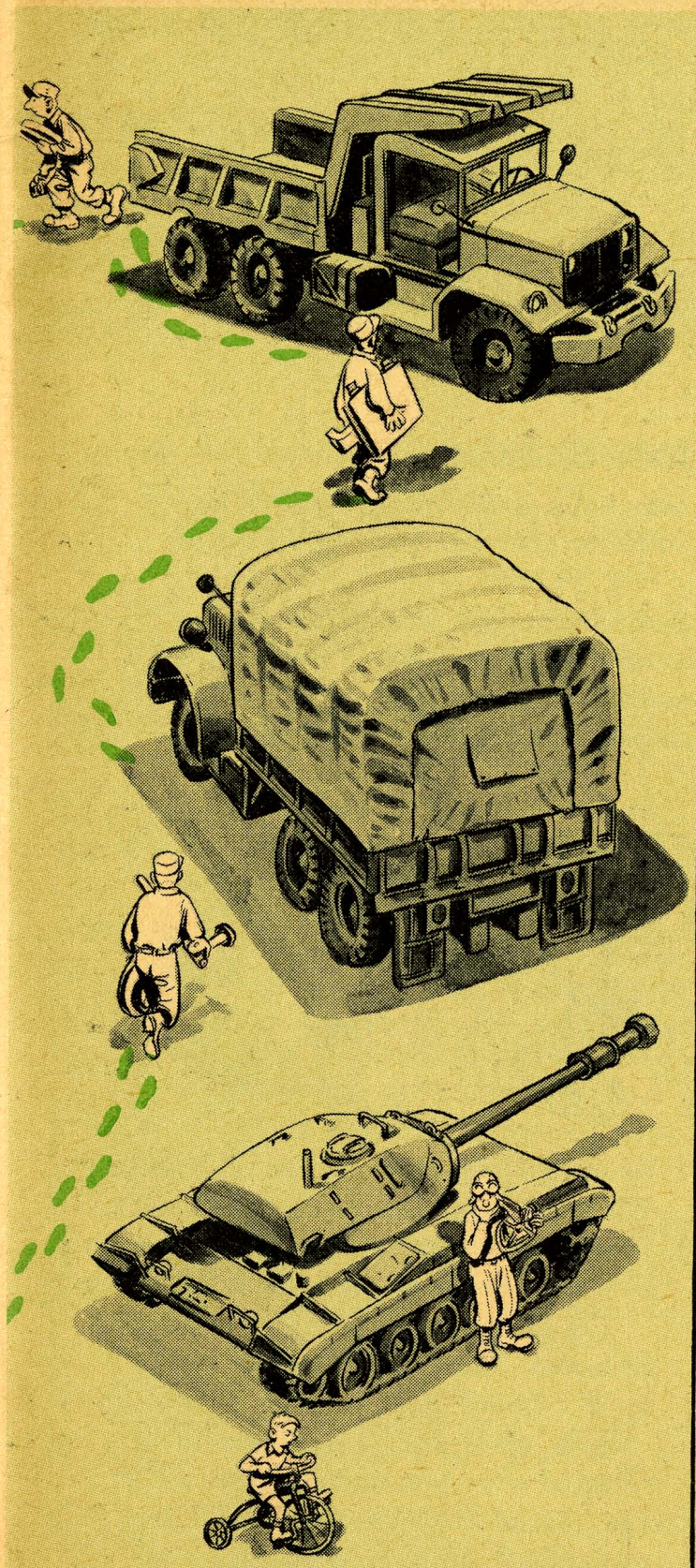

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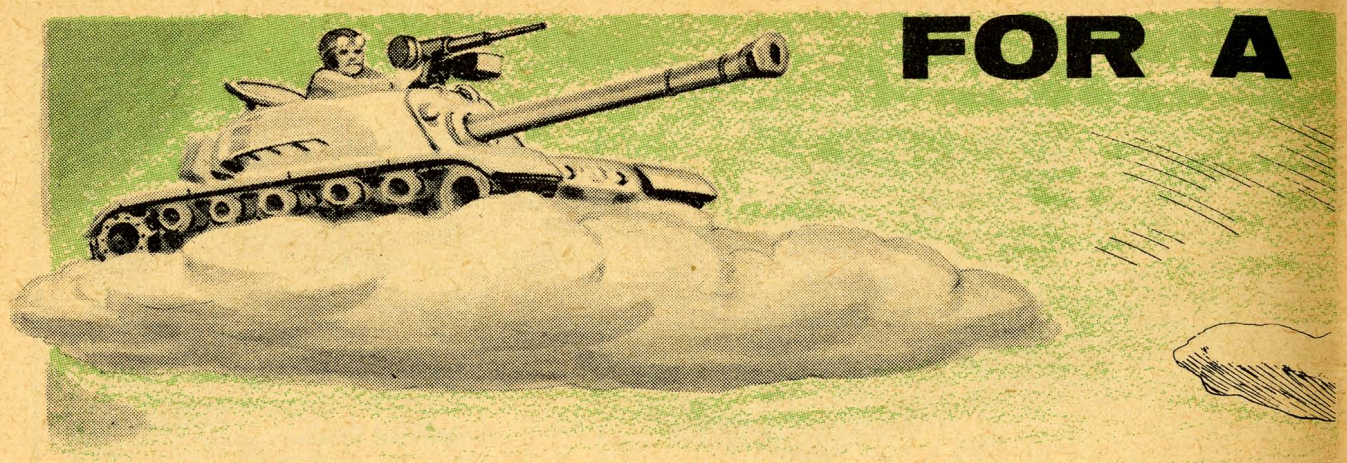
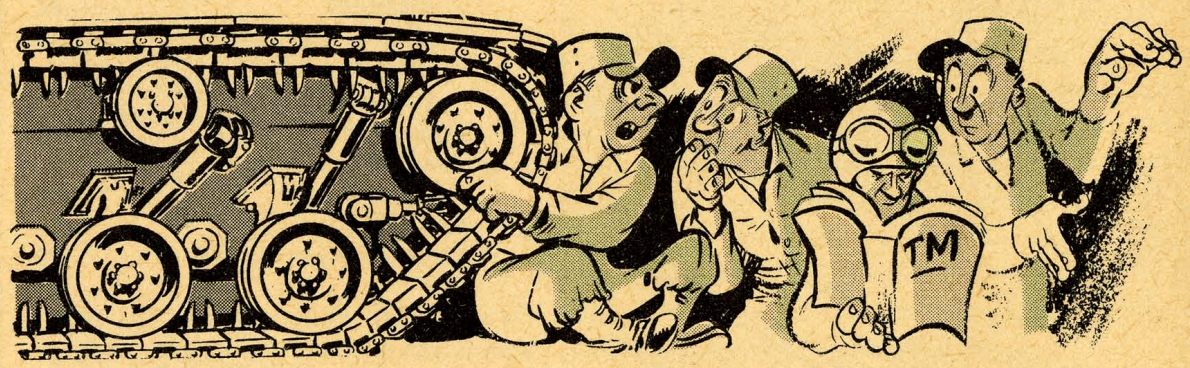



## M48 BULL SESSION

Gather round, chums, and let's hash over some of the things what've been happening to the M48 medium tank since she first began rolling off the assembly lines.

'Course there's been a pitch-pot fulla factory changes and a lot learned about 'er through testing and use in the field. So there's scads of new supply and maintenance stuff that you'll be interested in.

Why not just start at the bottom–suspension system, say—and sorta work our way up? OK?




**Roadwheel hubs** have two different types of filler plugs. The earlier type plug has a 9/32-in Allen recess, which will round out—unless you're awfully careful in removing it. If one gets damaged, y'can order the later type plug, which has an external hex head and takes a standard OVM socket wrench. It's Ord Stock No. H106-0444619.

To lube roadwheel bearings, you remove the hub-cap plug and use this center hole for checking the oil level. Fill the hub thru the side plug till oil runs out this center hole. (Side filler hole must be above the level hole).

The later model hub has a hole on each side. This is so that one's always up—for filling—neat, huh?

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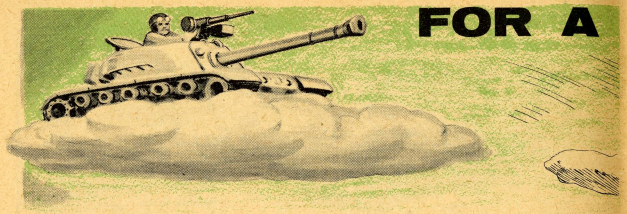

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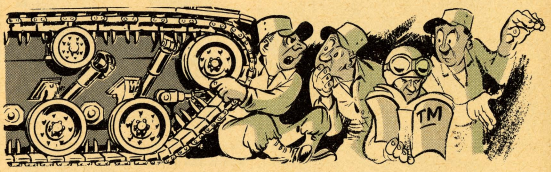


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**Hub seals** and *O*-rings should be replaced when you find excessive leakage around the hub. But remember: there should always be **some** oil around the hub, since the seal depends on slight seepage for correct sealing.

When installing the *O*-ring—it comes with a new seal—first lubricate the new seal with liquid hand soap or saddle soap and then roll the seal up the spindle and into the groove. Take it easy! Don't nick or pinch the *O*-ring—you'll ro-o-on it.

**Hub nuts** have a tendency to back off unless kept right tight. Keep 'em tight as possible. When the roadwheel disk is assembled to the hub, the nuts should be tightened—then **re**tightened after the tank runs three miles.

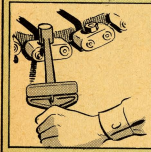
When replacing a roadwheel arm, check the inner spindle—as well as the inside surface of the torsion-bar housing—for signs of mud or dirt. If y'find any, better replace the inner retainer seal with a double lip seal (Ord Stock No. G254-8376364).

Keep in mind that the spring-loaded lip must be installed toward the bearing.

## TRACK WEDGE-BOLTS

As any good tank jockey knows, track end-connector wedge-bolts should be kept tight. But you **can** overdo it.

How tight is tight—and how tight is too tight? Good question.



TIGHT (THE RIGHT TIGHTNESS) FOR THESE BOLTS IS 140 TO 160 FT-LBS TORQUE. THIS WOULD BE SIMPLE ENOUGH TO GAGE IF YOU HAD A TORQUE WRENCH HANDY—AND IF THE WEDGE ASSEMBLY WAS CLEAN AND SMOOTH SO AS TO MAKE A TORQUE READING ACCURATE.

BUT THE CATCH IS THAT YOU'LL FIND YOURSELF TIGHTENING WEDGE BOLTS THAT ARE DIRTY, RUSTY, CORRODED, WORN, BATTERED, BUGGERED—AND OTHERWISE THE WORSE FOR RUGGED USE. AND, YOU'RE NOT LIKELY TO BE USING A TORQUE WRENCH FOR THE JOB.

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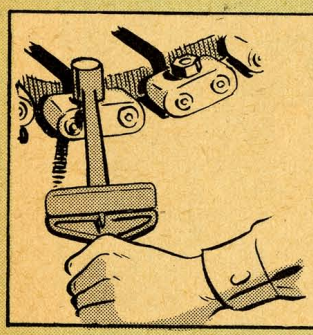

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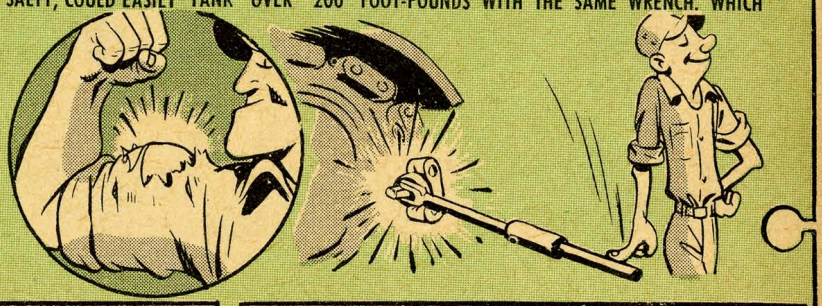
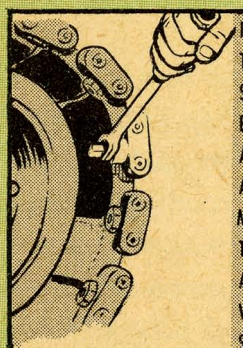
A GOOD ESTIMATE OF THE RIGHT TORQUE FOR THESE BABIES IS ABOUT, WHAT AN AVERAGE-SIZED TANKMAN CAN APPLY WITH THE 17-INCH FLEX-HANDLE WRENCH IN YOUR OVM—WITHOUT STRAINING

KEEP IN MIND THAT A BIG BRUISER, FEELING SALTY, COULD EASILY YANK OVER 200 FOOT-POUNDS WITH THE SAME WRENCH. WHICH WOULD BE **TOO** TIGHT—PUT TOO MUCH STRETCH ON THE BOLT—AND KNOCK A SIZABLE CHUNK OFF ITS LIFE-SPAN. AND THE SAME THING'S LIKELY TO HAPPEN IF SOME MUSCLE-MISER SLAPS A "CHEATER" ON HIS WRENCH HANDLE FOR LEVERAGE.

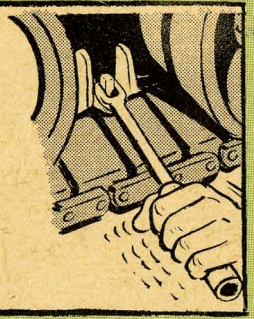




FOR BEST RESULTS ON YOUR M48 TANK, TIGHTEN WEDGE BOLTS OVER THE COMPENSATING-IDLER WHEEL. AT THIS POINT THE 7° BEND OF THE TRACK SHOES (AS THEY WRAP AROUND THE WHEEL) PERMITS THE WEDGE AND THE FLAT SURFACE OF THE TRACK PIN TO MATE WITHOUT STRAINING—AND Y'CAN DRAW THE CONNECTION UP TIGHT WITHOUT DAMAGING THE BOLT. THE ANGLE OF THE PIN-WEDGE CONNECTION HELPS GIVE NEEDED SPRING, OR LIFE, TO THE TRACK. THAT IS, IT WILL IF THE CONNECTION'S KEPT TIGHT.

OF COURSE, WHEN YOU'RE TIGHTENING WEDGES, THE CENTER GUIDE-NUTS SHOULD BE LOOSE ENOUGH TO LET THE TRACK PINS TURN AS MUCH AS NEEDED TO LINE UP THE PIN FLATS WITH THE WEDGE FLATS. THIS DOESN'T NECESSARILY MEAN YOU'LL HAVE TO LOOSEN 'EM FIRST; NORMAL OPERATION USUALLY WILL HAVE TAKEN CARE OF THAT.

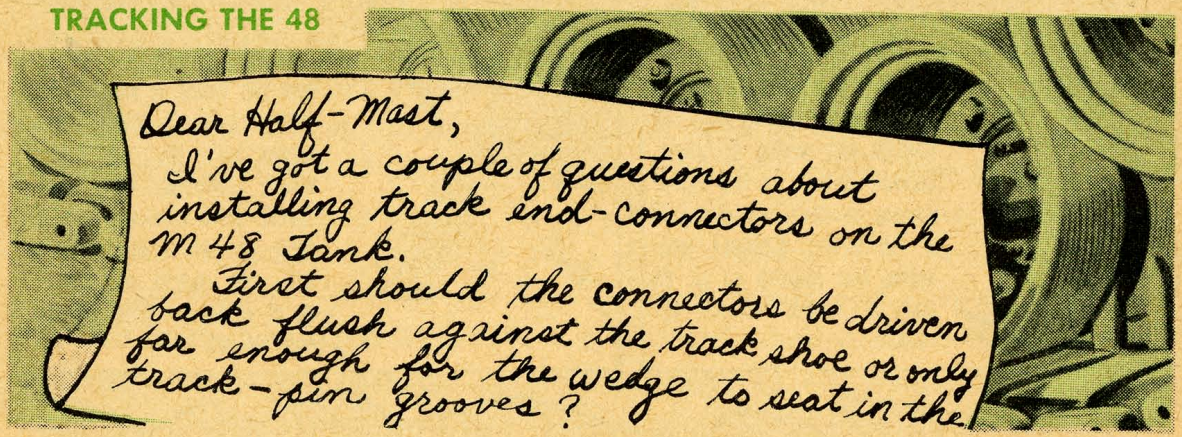
AFTER WEDGES ARE TIGHT, TIGHTEN GUIDE NUTS WITH PLENTY OF HANDLE (24 INCHES) ON 3/4 INCH SQUARE-DRIVE SOCKET WRENCH. A HEFTY TUG WILL GIVE 300 TO 320 FT-LBS. FOR YOUR GUIDE-NUT TORQUE.



WHEN THE SITUATION PERMITS, GIVE WEDGES AND GUIDES A GOOD GOING OVER AFTER EVERY 25 MILES OF OPERATION.

TIGHTENING OVER THE IDLER WHEEL, YOU WORK THREE OR FOUR SECTIONS OF TRACK ON EACH SIDE. MOVE TANK FOR NEXT SECTIONS OVER THE IDLER. TAKES MORE TIME, BUT RESULTS ARE WORTH IT.

## TRACKING THE 48



Dear Half-Mast,

I've got a couple of questions about installing track end-connectors on the M48 Tank.

First should the connectors be driven back flush against the track shoe or only far enough for the wedge to seat in the track-pin grooves?

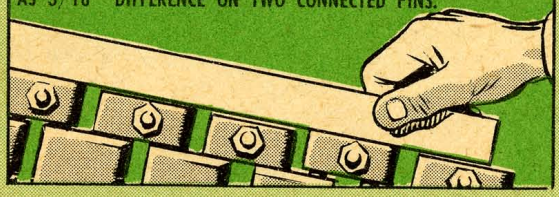
Secondly, what's the best tool for driving the connectors into place?

Lt. J. L. R.

Dear Lt J. L. R.,

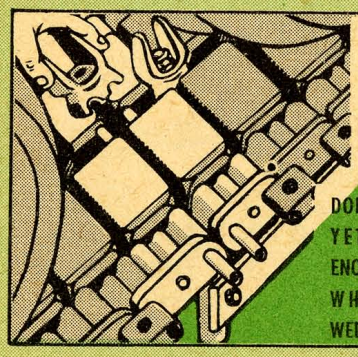
Your best bet with those end connectors is to set 'em so that the connector wedge will center—as nearly as possible—in the track-pin grooves.

DIMENSIONS OF TRACK ASSEMBLY VARY — SO WILL CONNECTOR'S POSITION ON THE PINS WHEN WEDGE IS CENTERED. ON SOME IT'LL BE FLUSH WITH THE TRACK SHOE; ON OTHERS, OUT FARTHER ON THE PIN. MAY BE AS MUCH AS 3/16" DIFFERENCE ON TWO CONNECTED PINS.

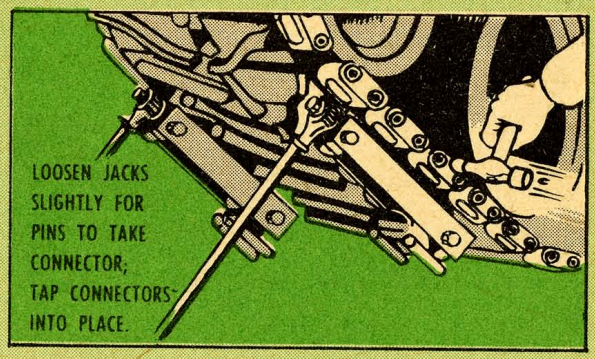


OF COURSE, YOU CAN'T ALWAYS STOP THE CONNECTOR IN EXACTLY THE RIGHT SPOT. BUT THE WEDGE SHOULD SEAT OK IF Y'TAP IT LIGHTLY WITH A HAMMER AS IT'S TIGHTENED. THE RIGHT TOOL FOR TAPPING—WEDGES AND CONNECTORS—IS THE 2-LB BALL-PEEN HAMMER YOU'VE GOT ON YOUR TANK. AS HAS BEEN SAID BEFORE, SLEDGES ARE OUT. THEY JUST BANG THINGS UP. IF THE CONNECTOR'S TOO RUSTY AND CORRODED TO GO ON WITH LIGHT TAPPING, BETTER CLEAN IT UP—IF POSSIBLE— OR REPLACE IT.

A lotta experience has shown the best way to install a block of track on the M48 is:

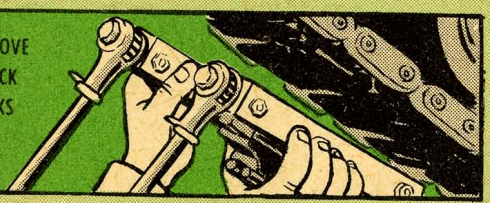


DRAW TWO ENDS OF TRACK TOGETHER WITH TRACK JACKS. INSTALL CENTER GUIDE AND CAP. DON'T TORQUE CAP NUT YET; LEAVE IT LOOSE ENOUGH FOR PINS TO TURN WHEN YOU TIGHTEN WEDGE.

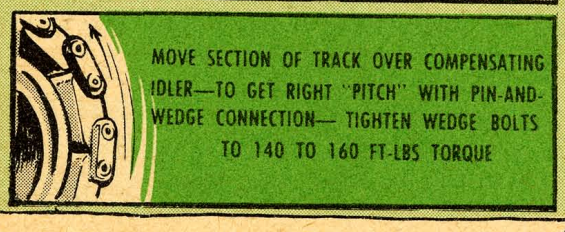


LOOSEN JACKS SLIGHTLY FOR PINS TO TAKE CONNECTOR; TAP CONNECTORS INTO PLACE.

REMOVE TRACK JACKS



INSERT WEDGES AND SEAT 'EM BY LIGHT TAPPING WITH HAMMER



MOVE SECTION OF TRACK OVER COMPENSATING IDLER—TO GET RIGHT "PITCH" WITH PIN-AND-WEDGE CONNECTION— TIGHTEN WEDGE BOLTS TO 140 TO 160 FT-LBS TORQUE

MOVE TRACK AGAIN SO Y'CAN GET AT CENTER GUIDE NUTS — AND GIVE THESE ITEMS A HEFTY 300 TO 320 FT-LBS TORQUE.

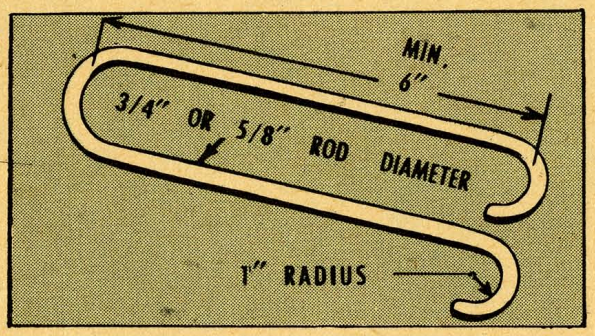
Half-Mast

## EASY OUT

Lifting your M48 tank power-pack with the issue sling means you have to disconnect the governor linkage to prevent bending it when you hook up to the accessory end of the engine.

You can have lots of fun trying to set that governor linkage when you replace the engine.

If you'll make up a little longer hook, like shown below, out of 5/8- or 3/4-inch cold-rolled rod stock, you'll be able to hook it into the two holes in the accessory-case lifting-plate without removing the governor linkage, and can lift the engine without hurting anything.



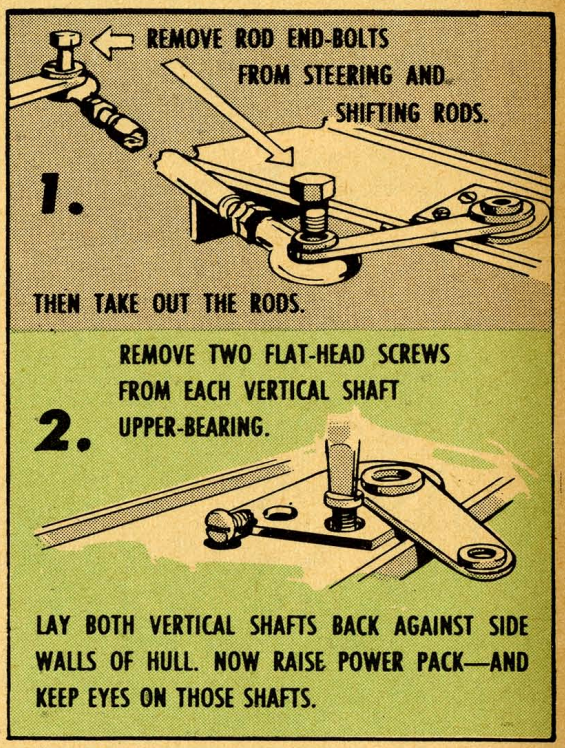

## WATCH THE BLINKIN' LINKAGE

You've gotta give a little extra attention to the shifting and steering linkage.

If it's an early 48, the rear vertical shafts on both the steering and shifting linkage are equipped with a square drive that merely lifts out of a square socket deep down on the vehicle floor.

But on the later 48's the linkage rods don't come apart at this point. Both shafts disconnect at the bearing mounting-bracket attached high on the transmission. Overlook this and you'll rip something up.

Here's how to disconnect the linkage on the later jobs:




The early models with the socket-drive set-up come apart easy enough. But putting 'em back together is something else again. You find it isn't so easy lining up the drive and socket,—while at the same time grappling with a few tons of power plant.

To save time and tempers, detach the linkage from the transmission and replace it after the power pack's installed.

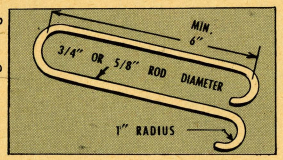
# Down in the '48's

## EASY OUT

Lifting your M48 tank power-pack with the issue sling means you have to disconnect the governor linkage to prevent bending it when you hook up to the accessory end of the engine.

You can have lots of fun trying to set that governor linkage when you replace the engine.

If you'll make up a little longer hook, like shown below, out of 5/8- or 3/4-inch cold-rolled rod stock, you'll be able to hook it into the two holes in the accessory-case lifting-plate without removing the governor linkage, and can lift the engine without hurting anything.



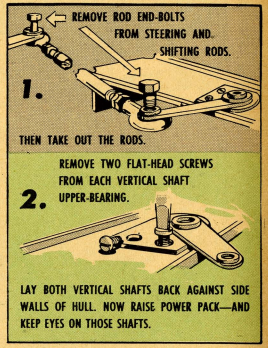

## WATCH THE BLINKIN' LINKAGE

You've gotta give a little extra attention to the shifting and steering linkage.

If it's an early 48, the rear vertical shafts on both the steering and shifting linkage are equipped with a square drive that merely lifts out of a square socket deep down on the vehicle floor.

But on the later 48's the linkage rods don't come apart at this point. Both shafts disconnect at the bearing mounting-bracket attached high on the transmission. Overlook this and you'll rip something up.

Here's how to disconnect the linkage on the later jobs:

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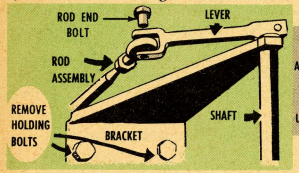
# engine room

You'll note that on this early type the bearing cannot be removed so easy. So you take the mounting bracket off the transmission.




TAKE OFF THE ROD-END BOLT—AND THE SHAFT, BRACKET AND LEVER COME OFF TOGETHER.

YOU CAN THEN SET 'EM ASIDE AND OUT OF YOUR WAY UNTIL THE POWER PACK'S BACK IN PLACE.

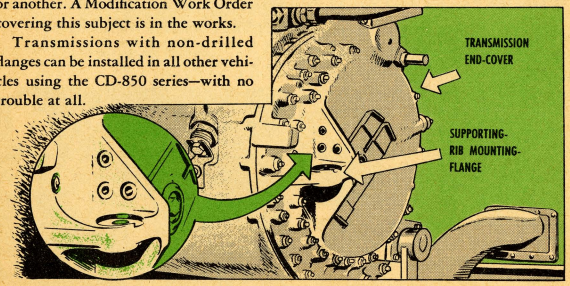
## TRANSMISSION END COVERS

In case you should ever have to make an **emergency** transmission replacement on the M48 (or the T43)—heed this.

Before hoisting another slush-box into place, make sure it's got three holes in the end-cover supporting-rib mounting-flange. They're put in at the factory or in rebuild for use on these two tanks. So whether it's a model CD-850-4, -4A or -4B, check for these holes in the flange. Or you may end up in the hole yourself.

For emergency use of one of the earlier jobs (without the holes), your Ordnance support unit might make a fast switch on end-covers. They'll fix you up, one way or another. A Modification Work Order covering this subject is in the works.

Transmissions with non-drilled flanges can be installed in all other vehicles using the CD-850 series—with no trouble at all.



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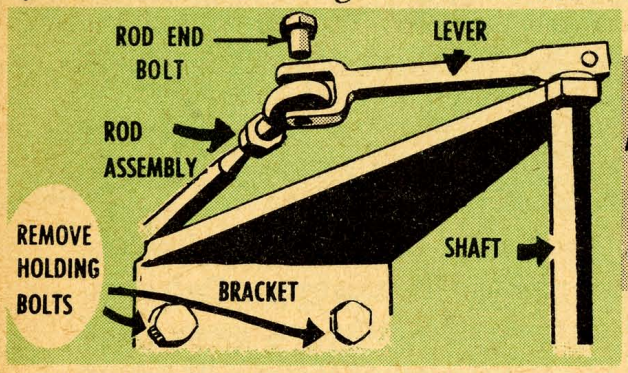


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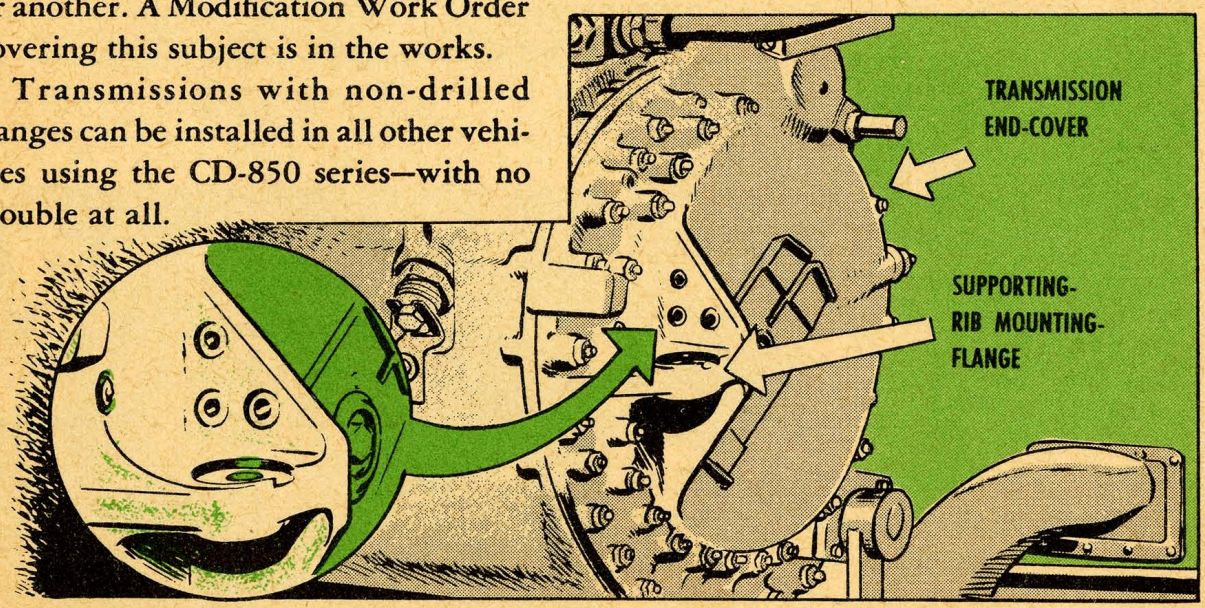
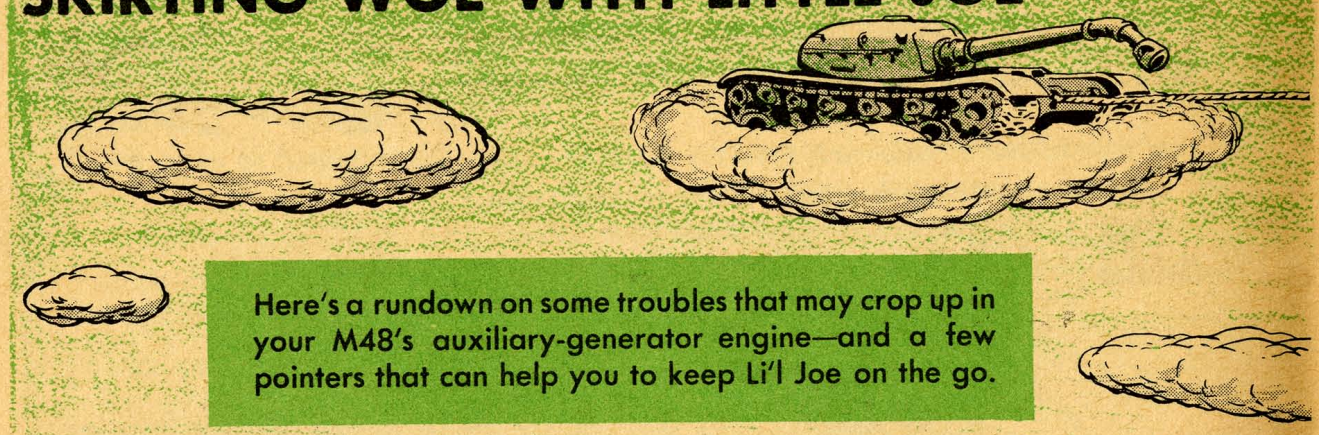


# SKIRTING WOE WITH LITTLE JOE

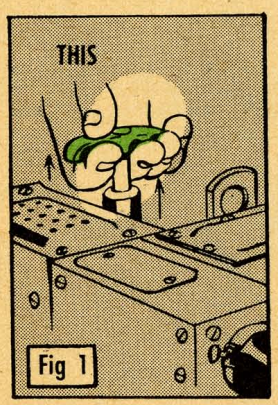


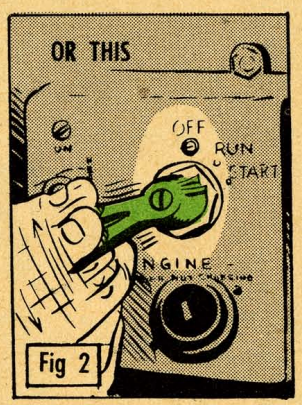
Here's a rundown on some troubles that may crop up in your M48's auxiliary-generator engine—and a few pointers that can help you to keep Li'l Joe on the go.

**Hydrostatic lock** can come from a leaky needle-valve letting raw fuel seep into the cylinder. Or, from water getting in through the exhaust system. (Easy with that wash job.)

You flip the switch to START, and **wham!**—the piston slams up against a "block" of fluid that won't give. But something else may.

To avoid damage, check for hydrostatic lock before you start—particularly if Joe's not been used for a few days. You do this by turning 'er over once with the manual starter (Fig 1), if y'have one. Case you don't have a hand



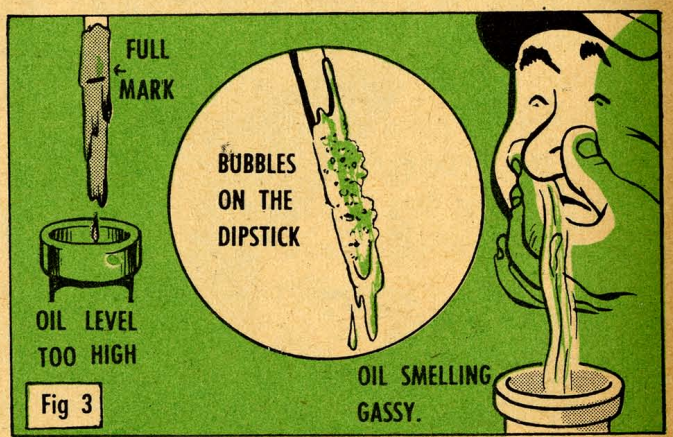




starter, ease 'er over with a series of short—but distinct—ON-OFF movements of the starter (magneto) switch (Fig 2). If she's locked, you'll feel it.

Ordinarily, you'd turn a hydrostatic lock problem like this over to Ordnance. But if you gotta make emergency use of Li'l Joe first—relieve the lock by taking out the spark plug and handcranking 'er till the cylinder's clear of fluid.

Always "feel out" a brand new Li'l Joe—or one that's fresh from storage—before you start it. Chances are there'll be enough preservative oil in the cylinder to cause a lock. If so, boot it out the same way.

**Piston seizure** can happen if your fuel-pump diaphragm goes porous and lets enough gas into the crankcase to dilute the oil so much it won't lubricate the cylinder. Watch for these danger signals: oil level too high; bubbles on



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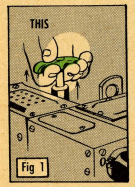
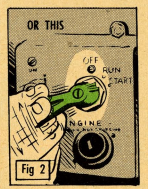



Fig 1

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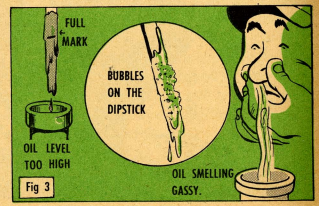
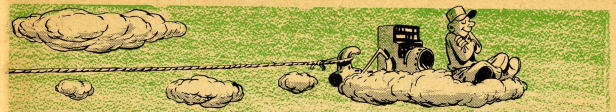



Fig 3





**Water** may collect in your generator housing, if it's an early model with no drain hole provided. You can fix this up in short order by drilling a 5/16-in hole in the bottom of the generator shroud—at the lowest point, of course (Fig 4).

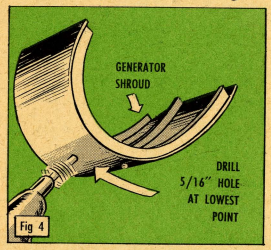



Fig 4

**Oil drain-cock handle** can get jostled out of place enough to let the oil run out of the crankcase. You can get bracket clip (Ord Stock No. G256-8369849) that'll hold the handle closed (Fig 5). But unless or until you've got one, always make sure that handle's shoved tight to CLOSED.

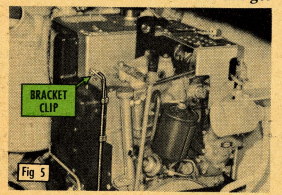


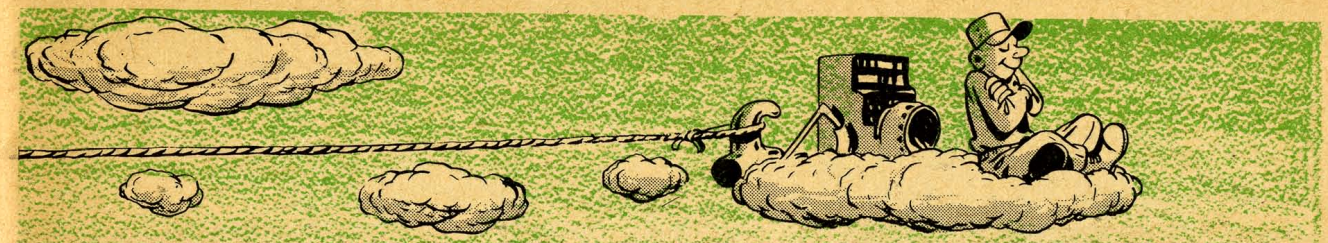

Fig 5

**The oil drain cup** between the shut-off valve and the drain hose can be another source of pain in your ear. It either gets clogged with muck and fails to drain, or the opening on top fails to engage the quick-disconnect valve-to-drain tube. In either case the oil runs into the hull and you've got a fire hazard or a hull-of-a-mess.

Best way to beat this one is to have a man underneath to see whether she starts to flow as soon as you turn the handle to DRAIN. If not, wind a wire up through the drain hose till it loosens any sludge that's clogging the cup. Then try again.

'Course, if the drain tube misses the opening in top of the cup, there's not much you can do but let 'er gurgle—and then clean out the hull. (And make sure it gets remedied the next time Li'l Joe or the power pack is pulled.) As of now, there's no way to get at this little dan-dandy when Li'l Joe and the power pack are in place.

If and when the hull gets used for a drain can, get rid of all the gook by opening the hull-floor drain-valves, removing the main-engine filter and drain-hole covers.



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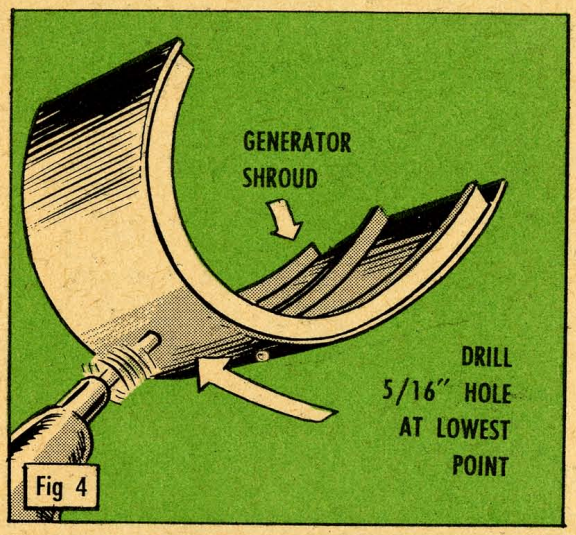

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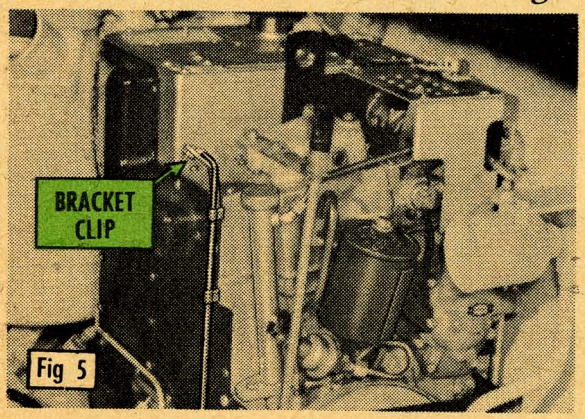

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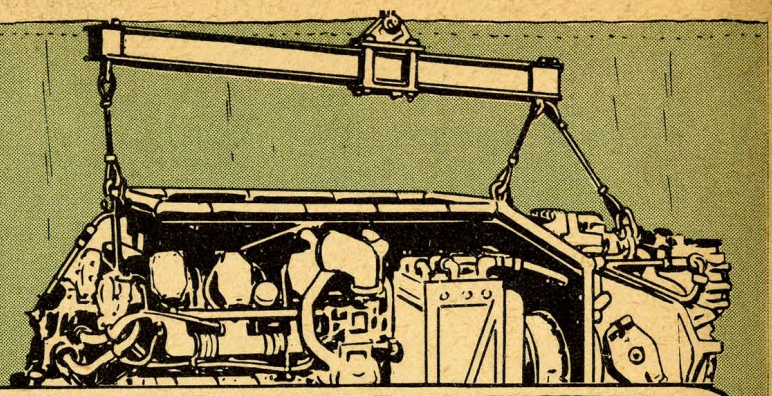
# M48

# SPECIAL TOOLS



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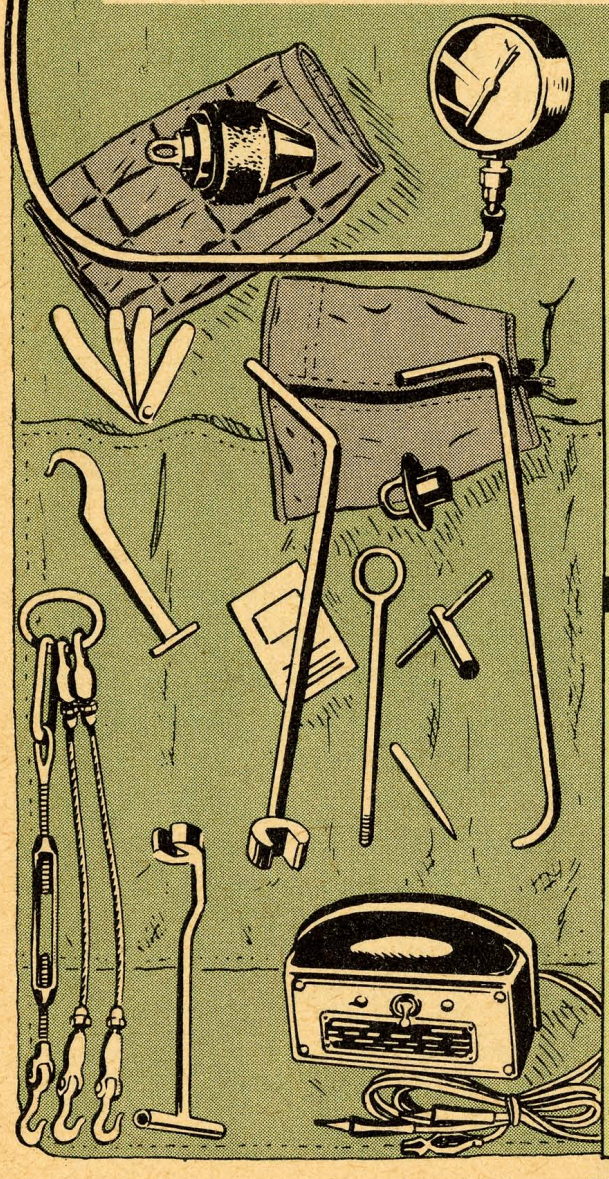
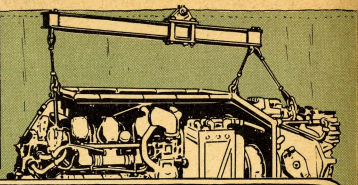


| Components (Engine) | Stock No. | Ordnance No. | Set A | Set B |
|---|---|---|---|---|
| GAGE, thickness, valve-tappet adjusting | 41-G-415-375 | B7083769 | | 1 |
| KIT, extension, electrical cable and fuel line, engine test stand (replaces kit A8366459) | 41-K-86-860 | A8390253 | | 1 |
| SLING, lifting, engine and transmission | 41-S-3832-23 | F8366455 | | 1 |
| WRENCH, crowfoot, ignition harness nut | 41-W-871-62 | C7950895 | 2 | 2 |
| WRENCH, engine turning, accessory end | | C8390366 | | 1 |
| WRENCH, double-end tubular, current offset, spark plug | | C8708639 | 2 | 2 |
| WRENCH, socket, double end, oil filter by-pass and oil-pressure control-valve | 41-W-3727-33 | B7082003 | | 1 |
| **Components (Power Train)** | **Stock No.** | **Ordnance No.** | **Set A** | **Set B** |
| GAGE, pressure, transmission oil | 45-G-1127-500 | B7950330 | | 1 |
| PULLER, transmission end covers | 41-P-2951-81 | A7083894 | | 3 |
| SLING, wire rope (looped ends), final-drive hub and sprocket assy | 41-S-3832-600 | C8366458 | 1 | 1 |
| SLING, lifting, final-drive assy (used with Sling 41-S-3832-600) | 41-S-3832-65 | C8366457 | | 1 |
| SLING, lifting, transmission | 41-S-3832-165 | C7083593 | | 1 |
| SLING, transmission end cover, left | 41-S-3829-650 | C7081580 | | 1 |
| SLING, transmission end cover, right | 41-S-3829-685 | C7083713 | | 1 |
| STAND, engine, and transmission transport | 41-S-4942-120 | F8366518 | | 1 |
| WRENCH, input driving-pinion turning, transmission end | 41-W-1536-380 | B7081564 | | 1 |
| WRENCH, socket (detachable), reverse and low range band adjusting-screw locknut | 41-W-3031-940 | B7076245 | 1 | 1 |
| WRENCH, socket (detachable), transmission input-shaft plug | 41-W-3057-50 | A7079407 | | 1 |

# M48
# SPECIAL TOOLS



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| GAGE, thickness, valve-tappet adjusting | 41-G-415-375 | B7083769 | | 1 |
| KIT, extension, electrical cable and fuel line, engine test stand (replaces kit AB366459) | 41-K-84-860 | A8390253 | | 1 |
| SLING, lifting, engine and transmission | 41-S-3832-23 | F8366455 | | 1 |
| WRENCH, crowfoot, ignition harness nut | 41-W-871-62 | C7950895 | 2 | 2 |
| WRENCH, engine turning, accessory end | | C8390366 | | 1 |
| WRENCH, double-end tubular, current offset, spark plug | | C8708639 | 2 | 2 |
| WRENCH, socket, double end, oil filter by-pass and oil-pressure control-valve | 41-W-3727-33 | B7082003 | | 1 |

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| GAGE, pressure, transmission oil | 45-G-1127-500 | B7950330 | | 1 |
| PULLER, transmission end covers | 41-P-2951-81 | A7083894 | | 3 |
| SLING, wire rope (looped ends), final-drive hub and sprocket assy | 41-S-3832-600 | C8366458 | 1 | 1 |
| SLING, lifting, final-drive assy (used with Sling 41-S-3832-600) | 41-S-3832-65 | C8366457 | | 1 |
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| SLING, transmission end cover, left | 41-S-3829-650 | C7081580 | | 1 |
| SLING, transmission end cover, right | 41-S-3829-685 | C7083713 | | 1 |
| STAND, engine, and transmission transport | 41-S-4942-120 | F8366518 | | 1 |
| WRENCH, input driving-pinion turning, transmission end | 41-W-1536-380 | B7081564 | | 1 |
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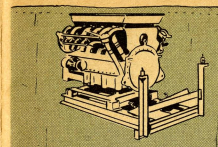
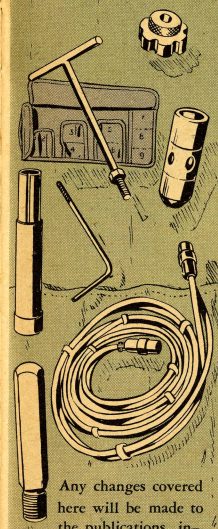
| WRENCH, socket (detachable), transmission input-shaft plug | 41-W-3057-50 | A7079407 | | 1 |



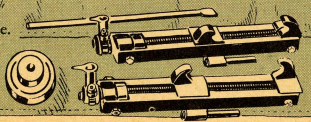


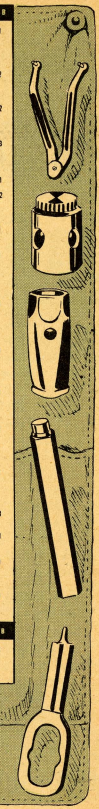


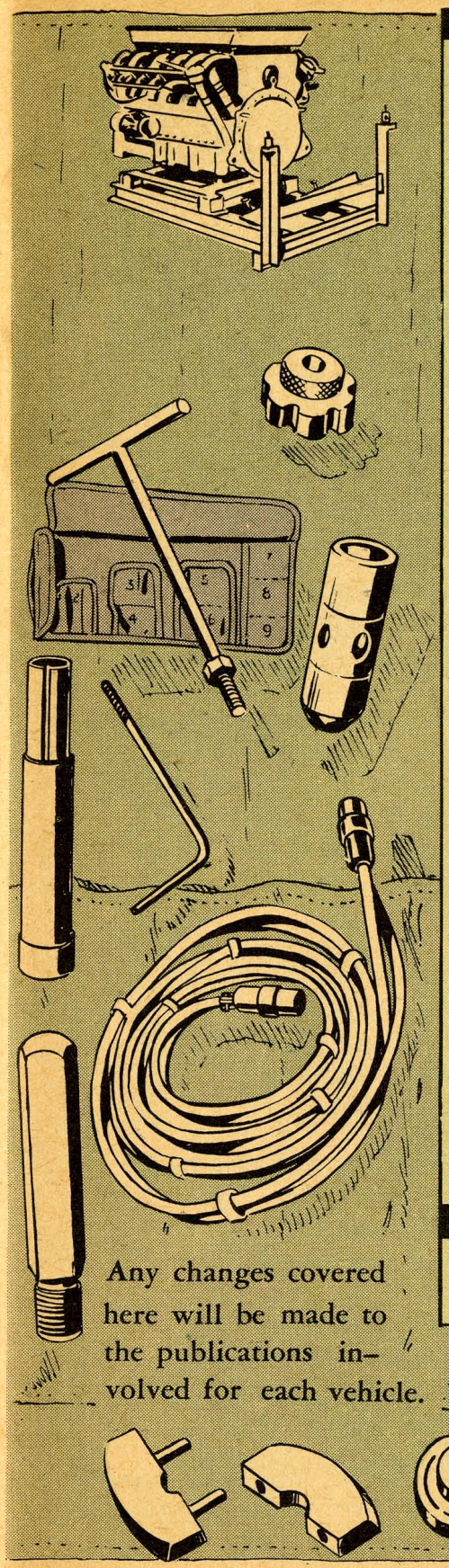
Any changes covered here will be made to the publications involved for each vehicle.

| Components (Suspension) | Stock No. | Ordnance No. | Set A | Set B |
|---|---|---|---|---|
| ADAPTER, puller, roadwheel arm assy (used with 41-P-2957-33 Puller) | 41-A-18-775 | B7080285 | | 1 |
| ADAPTER, torsion bar (used with puller 41-P-2957-33) | 41-A-18-247 | A8375338 | | 2 |
| ADAPTER, torsion bar (used with puller 41-P-2957-33) | 41-A-18-246 | A7083703 | | 2 |
| HANDLE, replacer (used with 41-R-2391-420, 41-R-2395-90 and 41-R-2392-65 Replacers) | 41-H-1396-510 | B7082881 | 1 | 3 |
| LIFTER, roadwheel arm | 41-L-1390-150 | D8366443 | 1 | 1 |
| PULLER, screw type, track end-connectors | 41-P-2951-215 | D8366543 | 1 | 2 |
| PULLER, slide hammer (used with Adapter 41-A-18-775) | 41-P-2957-33 | C73615 | | 1 |
| REMOVER AND REPLACER, bearing cup, tridck support-roller hub, inner (used with Screw 41-S-1047-315) | 41-R-2374-630 | B7082863 | 1 | 1 |
| REMOVER AND REPLACER, bearing cup, roadwheel and adjusting idler wheel, inner (used with Screw 41-S-1047-315) | 41-R-2374-635 | B7082876 | 1 | 1 |
| REMOVER AND REPLACER, bearing cup, wheel hub, outer (used with Screw 41-S-1047-315) | 41-R-2374-655 | B7082834 | 1 | 1 |
| REPLACER, oil seal, roadwheel-arm spindle, outer (used with Handle 41-H-1396-510) | 41-R-2392-65 | B7078973 | | 1 |
| REPLACER, oil seal, track support-roller hub (used with Handle 41-H-1396-510) | 41-R-2391-420 | B7082882 | 1 | 1 |
| REPLACER, oil seal, roadwheel-arm spindle, inner (used with Handle 41-H-1396-510) | 41-R-2395-90 | B7078977 | | 1 |
| SCREW, remover and replacer | 41-S-1047-315 | B7082837 | 3 | 3 |
| WRENCH, plug, straight bar, roadwheel-arm spindle plug | 41-W-1961-125 | A7078976 | | 1 |
| WRENCH, adjustable spanner, offset, wheel-bearing nut | 41-W-3242-300 | A7079082 | 1 | 1 |
| WRENCH, spanner, hook, roadwheel arm spindle nut | 41-W-3252-375 | B7078980 | | 1 |

| Components (Fire Extinguisher) | Stock No. | Ordnance No. | Set A | Set B |
|---|---|---|---|---|
| WRENCH, combination, flare nut and open end, fixed fire-extinguisher line nuts | 41-W-867-660 | B8366416 | | 1 |







| Components (Suspension) | Stock No. | Ordnance No. | Set A | Set B |
|---|---|---|---|---|
| ADAPTER, puller, roadwheel arm assy (used with 41-P-2957-33 Puller) | 41-A-18-775 | B7080285 | | 1 |
| ADAPTER, torsion bar (used with puller 41-P-2957-33) | 41-A-18-247 | A8375338 | | 2 |
| ADAPTER, torsion bar (used with puller 41-P-2957-33) | 41-A-18-246 | A7083703 | | 2 |
| HANDLE, replacer (used with 41-R-2391-420, 41-R-2395-90 and 41-R-2392-65 Replacers) | 41-H-1396-510 | B7082881 | 1 | 3 |
| LIFTER, roadwheel arm | 41-L-1390-150 | D8366443 | 1 | 1 |
| PULLER, screw type, track end-connectors | 41-P-2951-215 | D8366543 | 1 | 2 |
| PULLER, slide hammer (used with Adapter 41-A-18-775) | 41-P-2957-33 | C73615 | | 1 |
| REMOVER AND REPLACER, bearing cup, track support-roller hub, inner (used with Screw 41-S-1047-315) | 41-R-2374-630 | B7082863 | 1 | 1 |
| REMOVER AND REPLACER, bearing cup, roadwheel and adjusting idler wheel, inner (used with Screw 41-S-1047-315) | 41-R-2374-635 | B7082876 | 1 | 1 |
| REMOVER AND REPLACER, bearing cup, wheel hub, outer (used with Screw 41-S-1047-315) | 41-R-2374-655 | B7082834 | 1 | 1 |
| REPLACER, oil seal, roadwheel-arm spindle, outer (used with Handle 41-H-1396-510) | 41-R-2392-65 | B7078973 | | 1 |
| REPLACER, oil seal, track support-roller hub (used with Handle 41-H-1396-510) | 41-R-2391-420 | B7082882 | 1 | 1 |
| REPLACER, oil seal, roadwheel-arm spindle, inner (used with Handle 41-H-1396-510) | 41-R-2395-90 | B7078977 | | 1 |
| SCREW, remover and replacer | 41-S-1047-315 | B7082837 | 3 | 3 |
| WRENCH, plug, straight bar, roadwheel-arm spindle plug | 41-W-1961-125 | A7078976 | | 1 |
| WRENCH, adjustable spanner, offset, wheel-bearing nut | 41-W-3242-300 | A7079082 | 1 | 1 |
| WRENCH, spanner, hook, roadwhee' arm spindle nut | 41-W-3252-375 | B7078980 | | 1 |

| Components (Fire Extinguisher) | Stock No. | Ordnance No. | Set A | Set B |
|---|---|---|---|---|
| WRENCH, combination, flare nut and open end, fixed fire-extinguisher line nuts | 41-W-867-660 | B8366416 | | 1 |

Any changes covered here will be made to the publications involved for each vehicle.

HOW'S YOUR M48 TANK'S

# FIRE-CONTROL DOPE?

Been getting all the dope you're entitled to on your M48 tank's fire-control system? Here's a run-down on publications now available through regular channels:

TM 9-718B (Aug 52), Tank, 90-mm gun, T48 (M48)
TM 9-1527 (Nov 51), Quadrant, gunner's, M1
TM 9-1590 (Nov 52), Fuze setters for field artillery
TM 9-1608E (Aug 51), Periscopes, M12, M13, M13B1, M14, M14A1, M17 and T22
TM 9-6011 (Oct 53), Mount, periscope, T184E1
TM 9-6013 (Aug 53), Drive, range, T25
TM 9-6053 (Mar 54), Quadrant, elevation, M13 (T21)
TM 9-6057 (Jun 53), Periscope, M20 (T35)
Ord 7 SNL G-254 (Nov 52), Tank, 90-mm gun, T48
Ord 8 SNL F-140 (Jan 49), Quadrant, gunner's, M1
Ord 8 SNL F-205 (Dec 52), Lights, instrument (all types)
Ord 8 SNL F-235, Vol 5 (Jan 54), Periscope, M13, M13B1, M14, M14A1 and M17
Ord 8 SNL F-235 Vol 15 (Jun 52), Periscope, M20 (T35)
Ord 8 SNL F-235, Vol 16 (May 52), Telescopes, T156 and T156E1
Ord 8 SNL F-235, Vol 17 (Jun 52), Periscope, M19
Ord 8 SNL F-357 (May 52), Setter, fuze, M27
Ord 8 SNL F-360 (Oct 52), Quadrant, elevation, M13 (T21)
Ord 8 SNL F-377 (Mar 53), Drive, range, T25
Ord 8 SNL F-378 (Oct 53), Mount, periscope, T184E1
Ord 8 SNL G-254 (Jan 53), Tank, 90-mm gun, T48
Ord 9 SNL F-140 (Jun 50), Quadrant, gunner's, M1
Ord 9 SNL F-205 (Feb 47), Lights, instrument (all types)
Ord 9 SNL F-235, Vol 5 (Oct 50), Periscope, M13, M13B1, M14, M14A1 and M17
Ord 9 SNL F-235, Vol 15 (Mar 53), Periscope, M20 (T35)
Ord 9 SNL F-235, Vol 16 (Jan 53), Telescopes, T156 and T156E1
Ord 9 SNL F-235, Vol 17 (Oct 52), Periscope, M19
Ord 9 SNL F-359, Sec 2 (May 53), Drive, ballistic, T24
Ord 9 SNL F-360 (Jun 53), Quadrant, elevation, M13 (T21)
Ord 9 SNL F-377 (May 53) Drive, range, T25
Ord 9 SNL F-378 (May 53), Mount, periscope, T184E1
Ord 9 SNL G-254 (Sept 53), Tank, 90-mm gun, M48

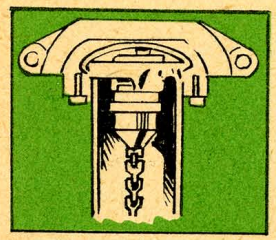
## HERE ARE SOME TO WATCH FOR:

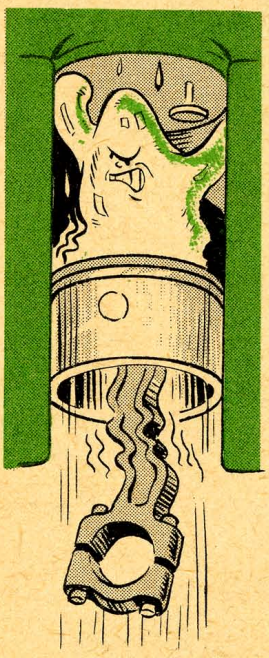
TM 9-6017, Lights, instrument, M10, M30, M32, M33, M36, M39C, M42, M44 and M45
TM 9-6023, Finder, range, T46
TM 9-6031, Telescope, T156
TM 9-6065, Drive, ballistic, M3 (T23E1), T23, T23E2 and T24
TM 9-7012, Tank, 90-mm gun, M48
Ord 8 SNL F-356, Sec 3, Finder, range, T46E1
Ord 8 SNL F-359, Sec 2, Drive, ballistic, T24E2
Ord 8 SNL F-385, Mount, telescope, T191
Ord 8 SNL F-386, Computer, ballistic, T30
Ord 9 SNL F-356, Sec 3, Finder, range, T46E1
Ord 9 SNL F-385, Mount, telescope, T191

Shut off the danger of—

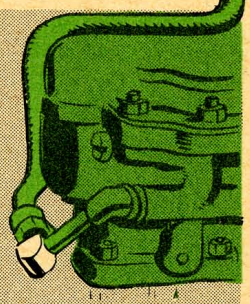
# TANK ENGINE HYDROSTATIC LOCK

Hydrostatic lock can be a pain in the esophagus for outfits using air-cooled-engine tanks.





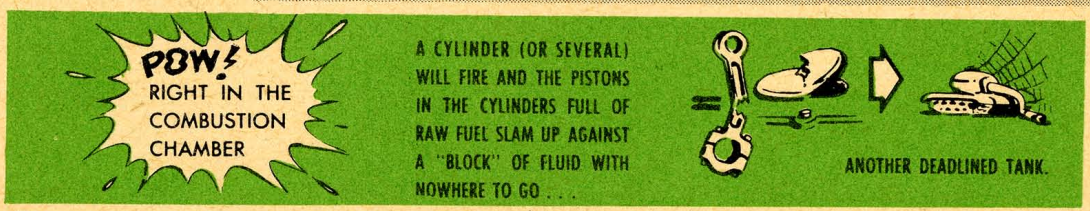
Here's what's happening to AV-1790 and AOS-895 power plants: A vehicle's left standing with a full fuel tank. Rising temperature causes the gasoline to expand. Then, when the pressure on the fuel-tank filler-cap reaches 4.5-PSI, or more, it'll cause the cap to open and let the excess fuel drain out. But sometimes the cap fails to open—because of a bum rubber gasket seal binding in the cap spring for example.



IF CARBURETOR-FLOAT NEEDLE-VALVE IS SEATED WRONG, GASOLINE MIGHT ENTER CARBURETOR AND SPILL INTO THE INTAKE MANIFOLD.

WHEN THE RAW FUEL SEEPS INTO CYLINDERS THROUGH OPEN INTAKE VALVES, YOU'VE GOT A HYDROSTATIC LOCK SITUATION.

THE NEXT TIME YOU TRY TO START 'ER WITHOUT TESTING FOR HYDROSTATIC LOCK . . .




Question is how to keep this from happening to you. There's one sure way—and you'll soon be seeing a directive on the subject. Just be sure that the

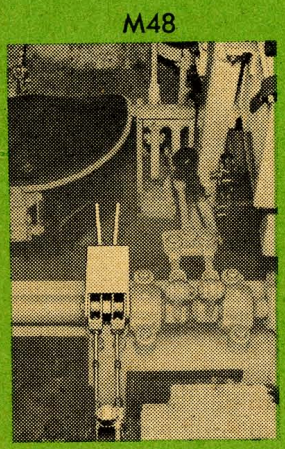
**fuel shut-off valves** are closed when you're not operating the vehicle (Fig 1). And before starting "feel out" your engine for hydrostatic lock.

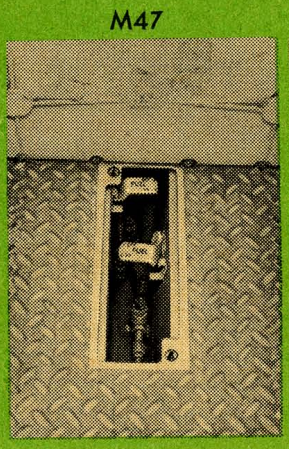
Keep in mind—we're talking about the shut-off valves—not the fuel shut-off switch or degasser on your instrument panel.

Most TM's call for closing the valves when the tank's to be left unused for any extended period of time. That includes such as your overnight stops. A little more trouble maybe—but a small price to pay for saving your engine assembly. Right?

On the M47 you'll want to take special care with handling of the fuel-shut-off valve access-plate on the bulkhead (Fig 2). See that it fastens tight and snug after each time you get at the valve handles. Otherwise, you'll get exhaust fumes from the personnel heater in the crew compartment—and you'll go to sleep without benefit of "Taps."

FUEL SHUT-OFF VALVES



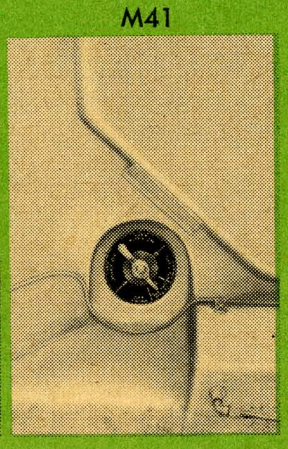




Fig 1

WHEN PARKING TANK—TURN **OFF**

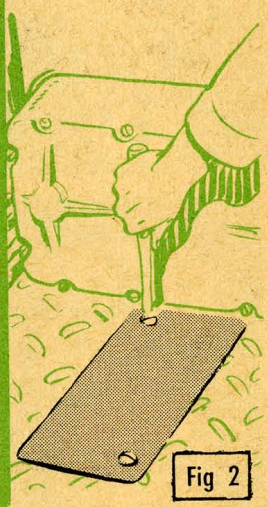


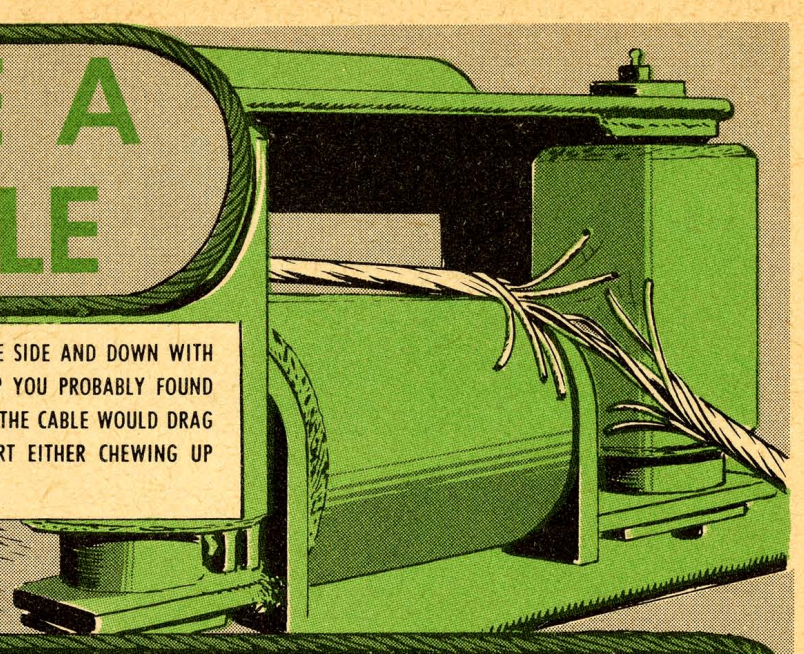
Fig 2

## LIGHT TANK EDITION

Your outfit can still get copies of that special issue of PS Magazine which tells all about the M41 series tanks. All you need do is drop a card to PS Magazine at Aberdeen Proving Ground, Maryland, and tell how many copies of the special light tank issue you need. They'll be sent right to you.

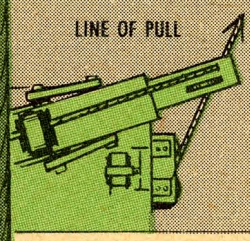
You can get copies of other back issues of PS the same way. Of course, you get distribution of new issues through your regular publications channels.

# SAVE A CABLE

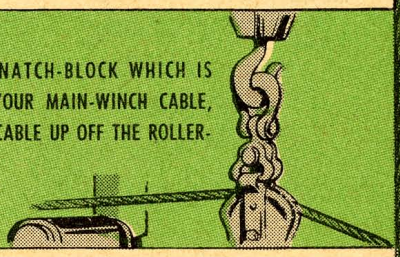


EVER HAVE TO MAKE A PULL TO ONE SIDE AND DOWN WITH YOUR M62 WRECKER'S REAR WINCH? YOU PROBABLY FOUND OUT THAT ON THE OLDER WRECKERS, THE CABLE WOULD DRAG ACROSS THE BOTTOM ROLLER-SUPPORT EITHER CHEWING UP THE CABLE OR JAMMING THINGS UP.

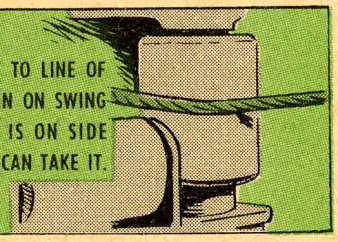
SO YOU ALWAYS MAKE A STRAIGHT PULL WHEN POSSIBLE. BUT THERE ARE TIMES WHEN YOU CAN'T HEAD THE WRECKER STRAIGHT AWAY FROM YOUR LOAD, ACCOUNTA BLOCKING A BUSY HIGHWAY, OR ACCOUNTA NO ROAD, OR WHATEVER. SO YOU'VE GOTTA PULL TO THE SIDE AND DOWN.



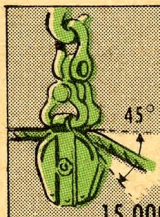

SWING YOUR BOOM TO SIDE TILL OVER LINE OF PULL, AND HANG SNATCH-BLOCK FROM OVM ON THE BOOM HOOK . . .



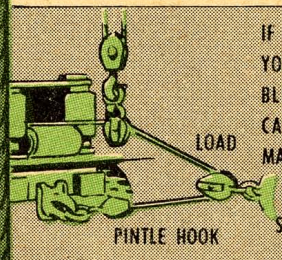
PULL UP ON SNATCH-BLOCK WHICH IS CLOSED OVER YOUR MAIN-WINCH CABLE, TILL IT RAISES CABLE UP OFF THE ROLLER-SUPPORT.



WITH BOOM SWUNG OUT TO LINE OF PULL THERE IS NO STRAIN ON SWING MOTORS. SIDE STRAIN IS ON SIDE CABLE GUIDE-ROLLER. IT CAN TAKE IT.



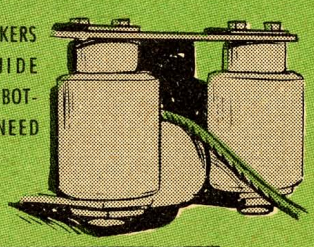

IF DOWNWARD BEND IS LESS THAN 45° WHERE WINCH CABLE GOES THROUGH SNATCH-BLOCK AND OUTRIGGERS ARE USED, A LOAD OF 15,000 POUNDS ON MAIN WINCH WON'T EXCEED BOOM LOAD LIMIT. UNDER 45° ANGLE ONLY PORTION OF LOAD IS ON BOOM.



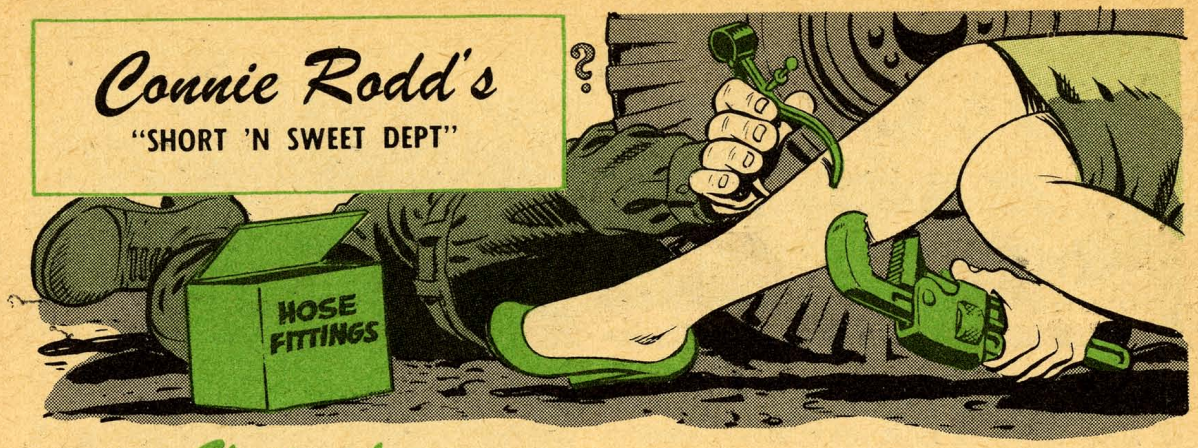

IF THIS IS NOT ENOUGH TO MOVE YOUR LOAD, PUT ANOTHER SNATCH-BLOCK ON LOAD. BRING MAIN CABLE BACK TO PINTLE HOOK. MAKING 2-PART LINE.

SECOND SNATCH-BLOCK

**NOTE** NEWER WRECKERS WITH SIDE CABLE GUIDE ROLLERS BACK BEHIND BOTTOM ROLLER DON'T NEED THIS TRICK.



**THOSE OLDER WRECKERS' REAR WINCH'LL BE FIXED UP BY AN MWO BEFORE LONG.**




## Vent valves

Your truck engine'll really be hurtin' with its crankcase ventilating system all fouled up. Which can be one of the reasons engines go on the blink early.

TB Ord 470 says to clean this system, the ventilating valve and all the connecting lines once every six months. But nothing says you can't do it more often, particularly on older engines. And be sure the hose connection to crankcase filler-neck on the Jeep is correctly alined and not kinked or squeezed shut.

## Hydraulic fluid's no oil

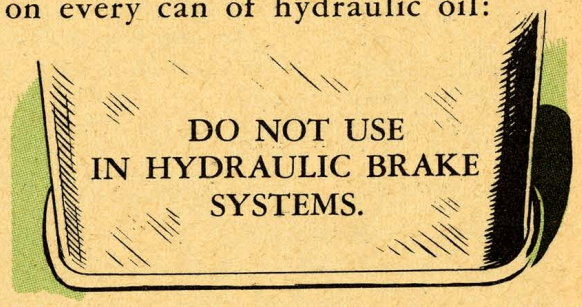
Oil may be OK in most hydraulic machines, but when it comes to the hydraulic brake system of your truck —no soap.

The truth is that hydraulic oil is a mineral oil, the kind that comes out of the ground. And mineral oil is bad on rubber—makes it swell. If you put it in your brake system, it'll swell the cups in the master cylinder so bad, you'll soon have no brakes at all.

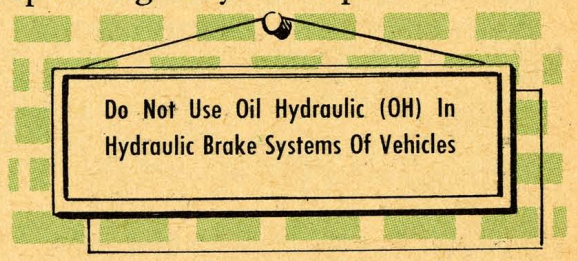
That's why you're always warned to keep your greasy hands off those cups. Even a greasy fingerprint can scuttle your braking system, or at least make it tougher to work.

When it comes to your vehicle's braking system, stick to Fluid, hydraulic brake, Ord Stock No. 51-F-360-725. Unlike oil, this is a mixture of organic stuff like alcohol, glycol and castor oil. Which doesn't affect rubber.

To make sure the next guy doesn't foul the works, write this in big letters on every can of hydraulic oil:



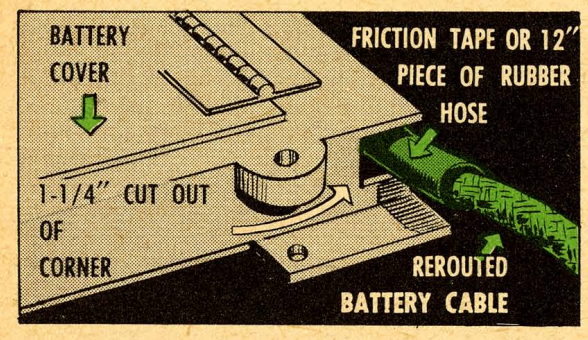

And to drive the story home, hang up this sign in your shop:




You'll save yourself a lot of work, Uncle Sam a lot of money and give yourself or your buddy a brake. And that's no oil.

## Battery short?

Is that battery on your M47 coming up short? If so, chances are the left battery-to-main-junction-box cable insulation is being cut by the sharp edge of the fuel tank. The same problem popped up on the M46's and M46A1's, but MWO Ord G244-W12 fixed that

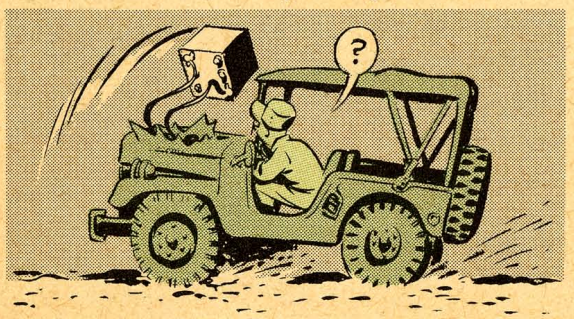



in a hurry. It stopped the trouble by rerouting the cable. Why not do the same thing for your M47.

## Tight nuts

Like so many other nuts on the loose, battery hold-downs would stay put with lock washers. And with batteries bouncing around, you'll probably find yourself with broken connecting cables.

Make sure your 1/4-ton truck's hold-down wing-nuts have washers, and if they haven't—put 'em there. And be sure those wing-nuts are on tight. Otherwise they'll fly away.




And while you're at it, check the jumper cable between the batteries too. Any tension from twist, tautness and bad installation can be the beginning of its end. Straighten yours out and you'll fly right. There's a TB on the way about this.

## Trailer hinges

Take care of those stowage-box hinges on your 1/4-ton trailers, because after that box is gone you won't get another. TB 9-871A-2 says it's to be removed and scrapped after it's served its time—and no replacements are being provided.

Lube the hinges at every *C* service (1000 miles); keep 'em swinging free. If by chance the hinges are already shot, try welding on a set of standard hardware hinges. That'll give the old box a new lease on life.

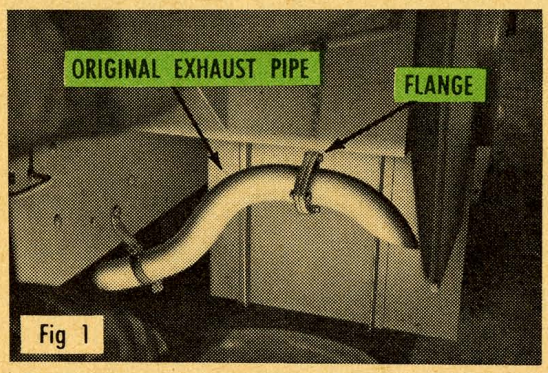
## Blow-hard

The hot blast from the exhaust of an M62 wrecker can burn the paints off your equipment. And if it gets in the cab, it can make you feel like Junior smoking a stogie.

But add the right extension to its pipe and it'll blow right, sure as shootin'. Fumes that could scar and blacken

the paint on nearby parts or drift back into the cab soon fade away.

The '62's saving extension is a 3-in pipe, 12 inches long. Curve it so that it faces downward (Fig 1). And at the



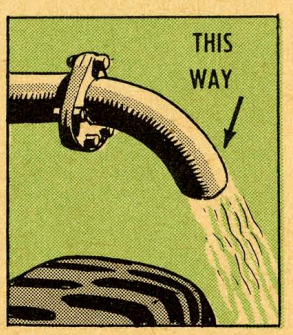

back end weld a flange with bolt-holes that match those in the tail pipe's flange. Then bolt the flanges together.

The removable flange makes it easy to take off the extension so you can use your fording equipment—should you want to go wading.

You can requisition the M62's extension parts by asking for:

| | |
|---|---|
| 1 ea. G744-8331956 | Tail Pipe Extension Assembly |
| 1 ea. G744-7348828 | Tail Pipe Extension Flange Gasket |
| 3 ea. Ord Part No. 182726 | 3/8 NF x 1-1/2 Hex Head Bolt |
| 3 ea. Ord Part No. 190906 | 3/8 NF Hex Head Lock Nut |

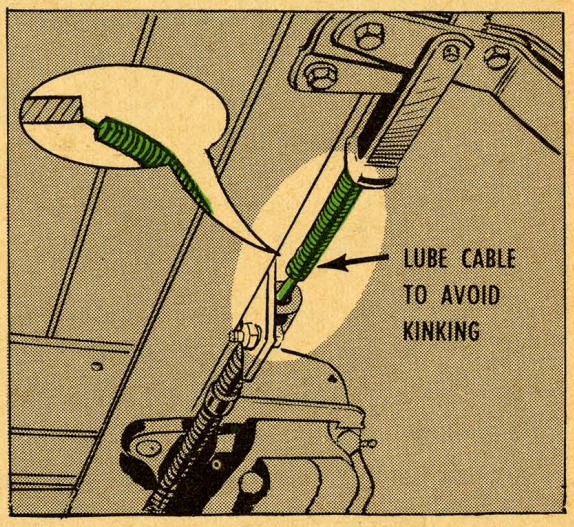
But make sure you don't throw a curve on your tires with that extension or the wheels will strike out. The heat can dry and crack the rubber and make them as brittle as last week's doughnuts. So keep it pointed away from the rubber always.




## *Lube-coat against rust*

Relaxing for long can make you rusty.

That's what happens to the 1-1/2-ton M104 trailer's hand-brake cable and its housing, if it's not used for a long time. When you start out again, the rust makes the cable kink where it enters the housing—won't let the brake release. Unless you do something quick, you'll burn the brake linings.



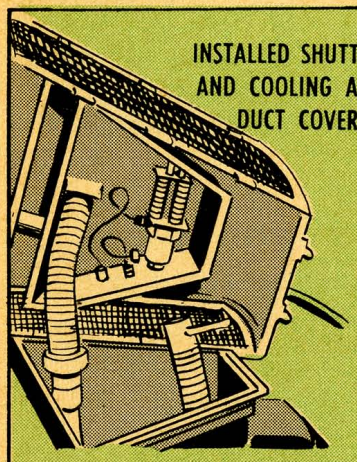

By simply lubing the cable when you park the trailer, you'll change its future. Not only will it help the cable, but the lube'll spread onto the housing and help there, too. Should the housing rust too much, it's time for a change.

With lube on the cable, you won't be draggin' your wagon. It'll roll merrily along. But you gotta be careful not to overlube. Too much oil might get on your tires. And that's not good—for rubber.

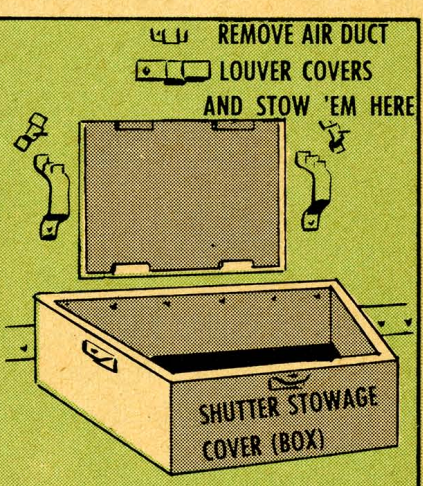
# *Is your otter hotter?*

Seems like the colder the weather, the more chance there is that you'll burn up the engine in your Otter (M76 amphibious cargo-carrier). And it's likely to be your own fault.

It works like this:




WHEN IT'S BELOW FREEZING AND YOU INSTALL THE AIR-RECIRCULATING SHUTTER, MAKE SURE YOU REMOVE THE OUTLET DUCT LOUVER COVERS AND STOW 'EM IN THE SHUTTER STOWAGE-BOX. IT'S TROUBLE IF YOU RUN THE OTTER WITH BOTH SHUTTERS AND LOUVER COVERS INSTALLED. LOOK AT TM9-772A, PARAGRAPHS 164C3 AND 164C6. CHECK FIG 121 ON PAGE 195.




DON'T RUN AO1 268-3A ENGINE ON OES ABOVE 0° F AT ANY TIME. IT WON'T TAKE IT. IF NECESSARY TO IDLE ENGINE LONGER THAN ONE HOUR, LET 'ER RUN AT 1500 RPM. THAT'S ENOUGH FAN SPEED TO KEEP HER COOL. SO KEEP IT COOL, MAN, **COOL.**

**When it comes to lubrication—**

# *Not too much, not too little*

For the results you want, you gotta lube with just the right amount—and you'll find that on your lube order.

Overlubing can cause your equipment to fail or cause damage to working parts, just like when you don't lube enough.

Too much oil in a crankcase takes the place of air that's needed for ventilation. And it'll cause carbon and gum to form in the engine's head.

Overgreasing can cause your seals to blow out, and the lube'll crawl over your brake linings, clutch facings and tires.

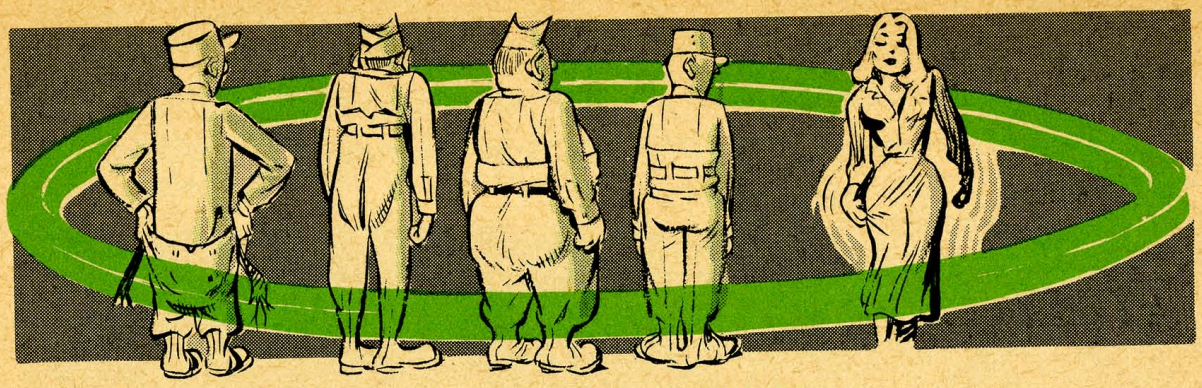
Get it on your clutch facings and you're asking for trouble. It can cause the clutch to grab, slip or jump.

If your lube order doesn't tell you how much grease to use on a fitting, then grease until it starts to ooze from the part being lubed. Then wipe off the lubed part so dirt won't collect around the fitting.

There's even more danger in underlubing than overlubing. If the engine oil level gets too low, there's not enough oil to clean and cool the engine like it should.

If there's not enough lube between a bearing and journal you'll get too much wear. So, watch out for the right lube level in all gear boxes and crankcases.

On these, there's no need guessing as to how much, 'cause you've got your lube order and your TM to tell you.



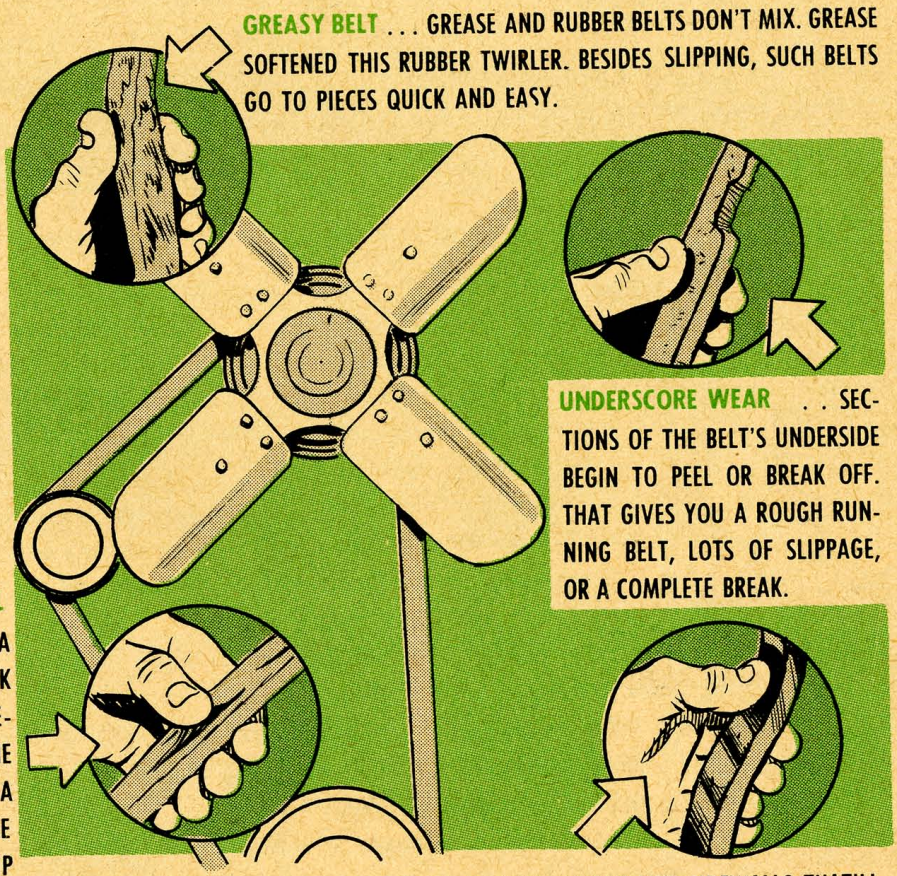
## BELT THESE AROUND

Check your fan-belt's underbelly. With its belly whirling from pulley to pulley, it gets lots of wear. The best way to cut down this wear is to tighten it like your TM says. But wear it will. So keep your eye on it, and when you see these signs—it's time for a change. If your vehicle's got double belts, change 'em both at the same time.

**CRACKED BELT . . .** CRACKS LIKE THESE MAKE "HINGE" POINTS. IT CAN BREAK APART WITHOUT ANY WARNING.

**SPLIT BELT AND SIDEWALL WEAR . . .** IT MAY LOOK A LITTLE FRAYED, BUT LOOK CLOSER. OFTEN THE SIDEWALL'S BADLY WORN OR THE UNDERSIDE'S SPLIT OPEN. A BELT LIKE THAT RIDES THE PULLEYS WRONG AND CAN RIP IN TWO ANY TIME.

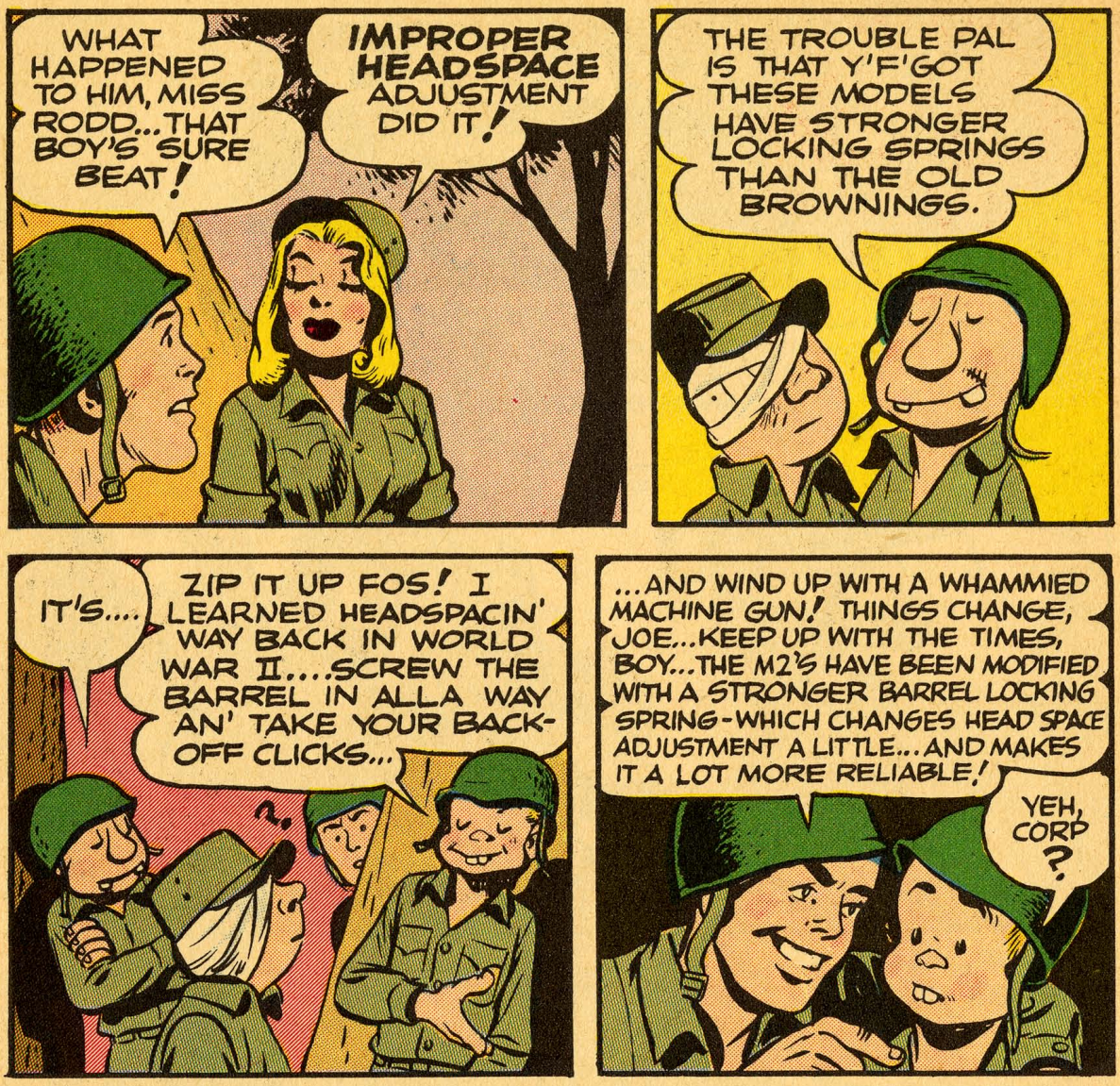
**GREASY BELT . . .** GREASE AND RUBBER BELTS DON'T MIX. GREASE SOFTENED THIS RUBBER TWIRLER. BESIDES SLIPPING, SUCH BELTS GO TO PIECES QUICK AND EASY.



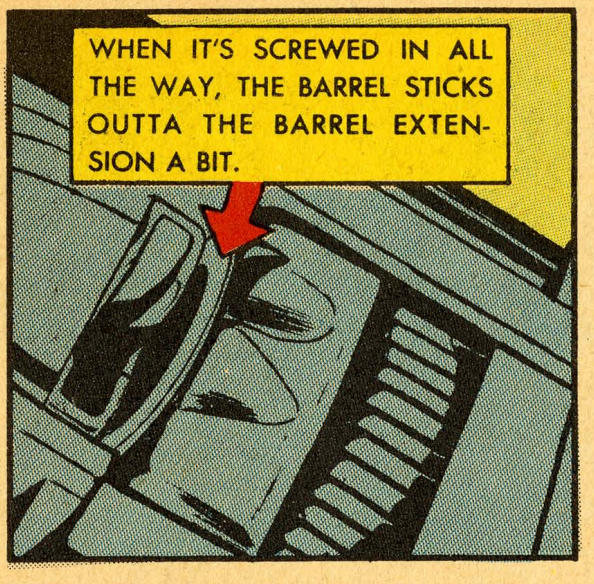
**UNDERSCORE WEAR . .** SECTIONS OF THE BELT'S UNDERSIDE BEGIN TO PEEL OR BREAK OFF. THAT GIVES YOU A ROUGH RUNNING BELT, LOTS OF SLIPPAGE, OR A COMPLETE BREAK.

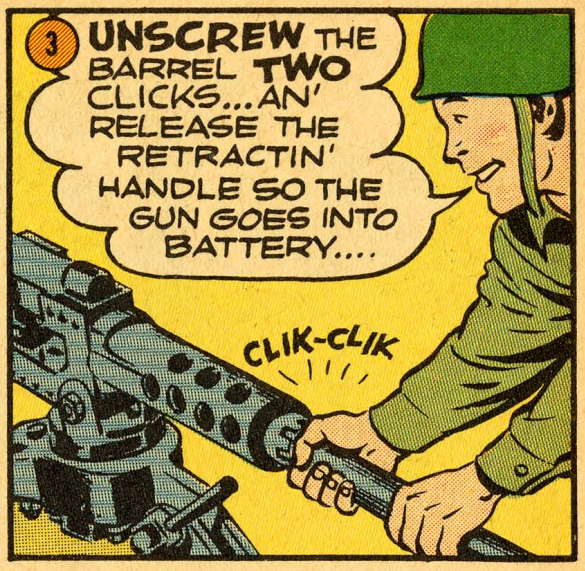
**GLAZED BELT . . .** THIS ONE HAS SLICK, HARD, BOARD-LIKE SIDEWALLS THAT'LL SLIP WITHOUT SPINNING THE GENERATOR AND PUMP PULLEYS. BESIDES ENDING UP WITH A LOW BATTERY, THIS'LL OVERHEAT YOUR ENGINE . . . TROUBLE AHEAD. BELTS THAT WEAR DOWN TO THE V-DRIVE BOTTOM ALSO LOOK LIKE THIS. WHEN V-BELTS HIT THE BOTTOM OF THE GROOVE THEY START SLIPPING.

JOE DOPE
HEADSPACE
on the modified .50-cal Browning M2 machine gun
DID SOMEONE MENTION HEADSPACE?
?
WHAT'S HOLDIN' YOU GUYS BACK? C'MON!
THE GUN'S ACTIN' SLUGGISH...NEEDS HEADSPACE ADJUSTIN'! CORPORAL READY!
THAT'S CONNIE RODD .... FOS IS REAL GONE ABOUT HER.

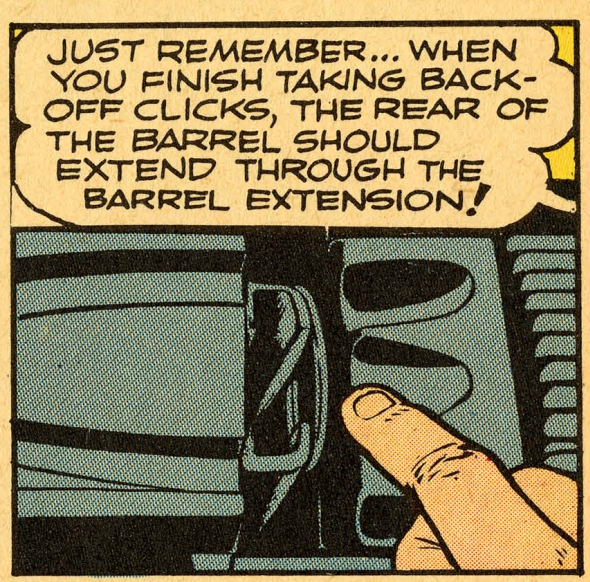



NOWADAYS YOU GO BY INSTRUCTIONS IN FM 23-65, CHANGE 4, PARA 11C


WHEN IT'S SCREWED IN ALL THE WAY, THE BARREL STICKS OUTTA THE BARREL EXTENSION A BIT.


3
UNSCREW THE BARREL TWO CLICKS... AN' RELEASE THE RETRACTIN' HANDLE SO THE GUN GOES INTO BATTERY....
CLIK-CLIK

IF THE GUN ACTS SLUGGISH GET THE LUG BACK IN ITS HOLE AND UNSCREW THE BARREL ONE MORE CLICK. THIS SHOULD BE ENOUGH ADJUSTMENT FOR A GUN THAT'S IN GOOD ORDER.
CLIK


JUST REMEMBER... WHEN YOU FINISH TAKING BACK-OFF CLICKS, THE REAR OF THE BARREL SHOULD EXTEND THROUGH THE BARREL EXTENSION!

IF STILL SLUGGISH, CAUSE MIGHT BE CLEAN-LINESS, LUBRI-CATION, OR OTHER ADJUST-MENT.

YOU FELLAS SHOULD PUT UP A PIN-UP ABOUT IT... NOTHIN' LIKE A GOOD PIN-UP!
WE ALREADY HAVE....

# JOE'S Dope Sheet

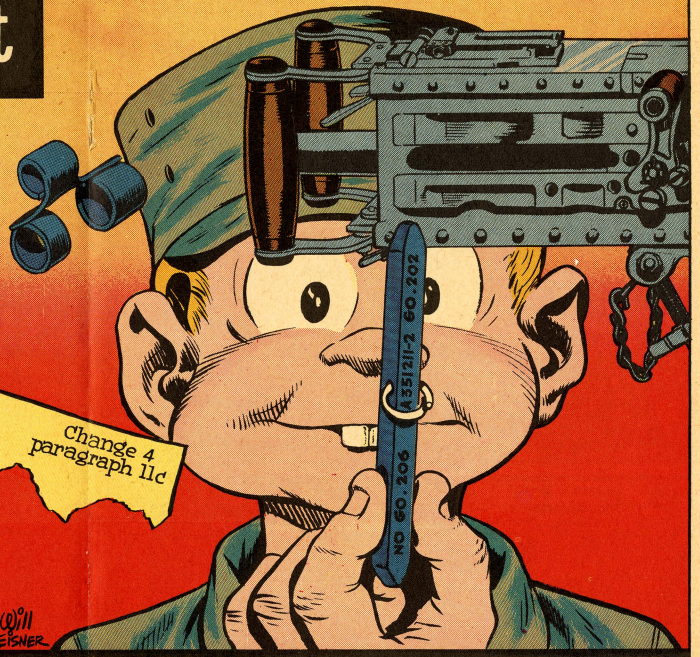
Setting headspace by ear is old hat
Or by pre-arranged marks, this-or-that
Modern headspace adjusting
Will keep you from busting
A weapon that'll go right to bat.

WE HAVE THE WORLD'S BEST EQ

# JOE'S Dope Sheet

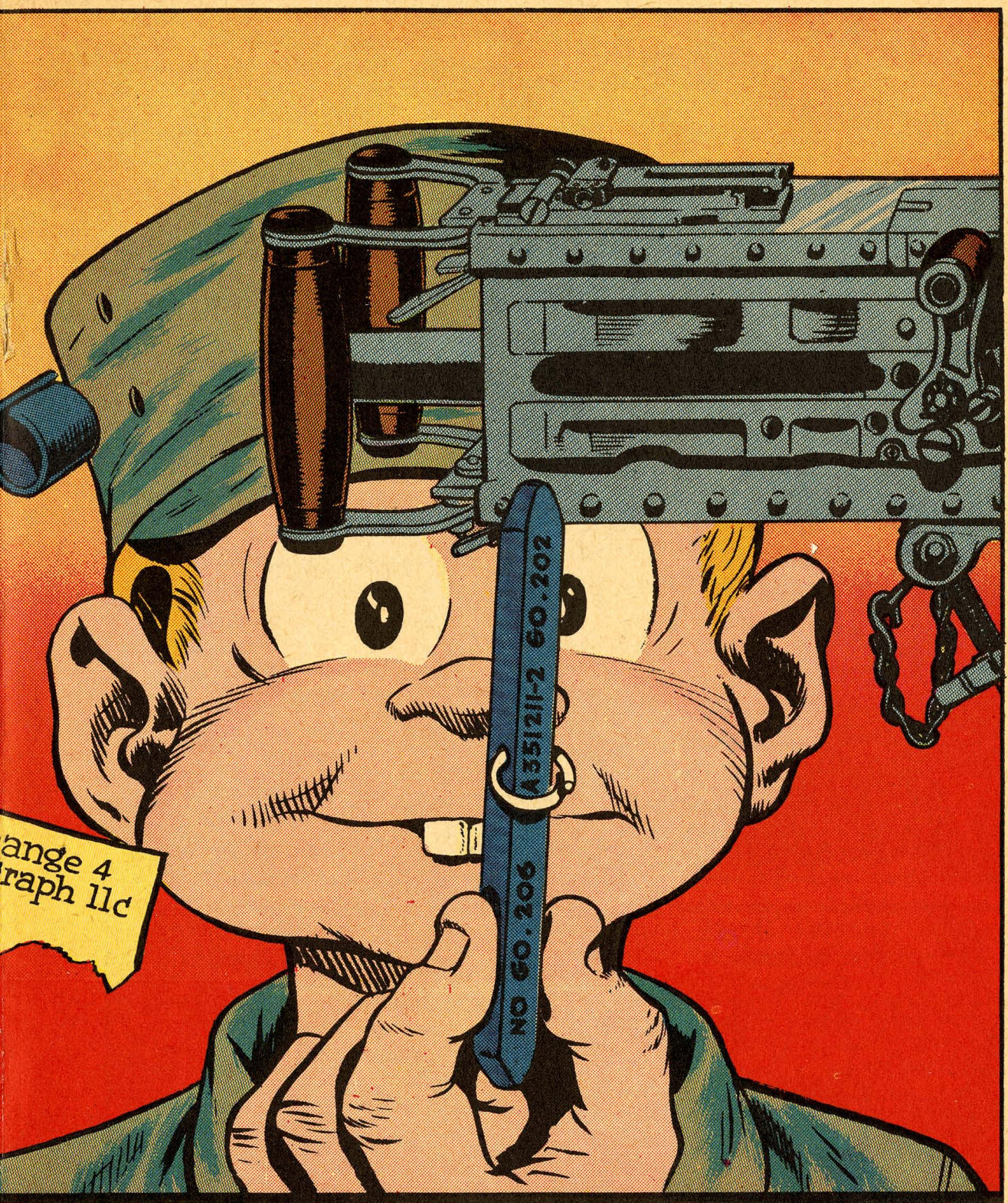
Setting headspace by ear is old hat
Or by pre-arranged marks, this-or-that
Modern headspace adjusting
Will keep you from busting
A weapon that'll go right to bat.

Change 4
paragraph 11d

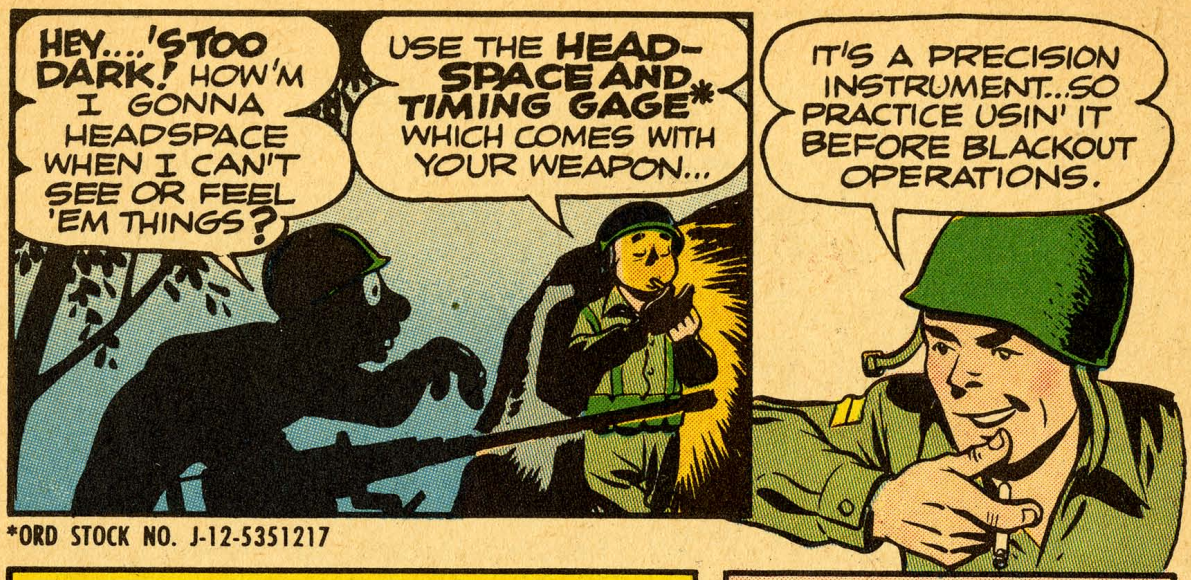



WILL EISNER

**WE HAVE THE WORLD'S BEST EQUIPMENT... *Take care of it***




# UIPMENT... Take care of it

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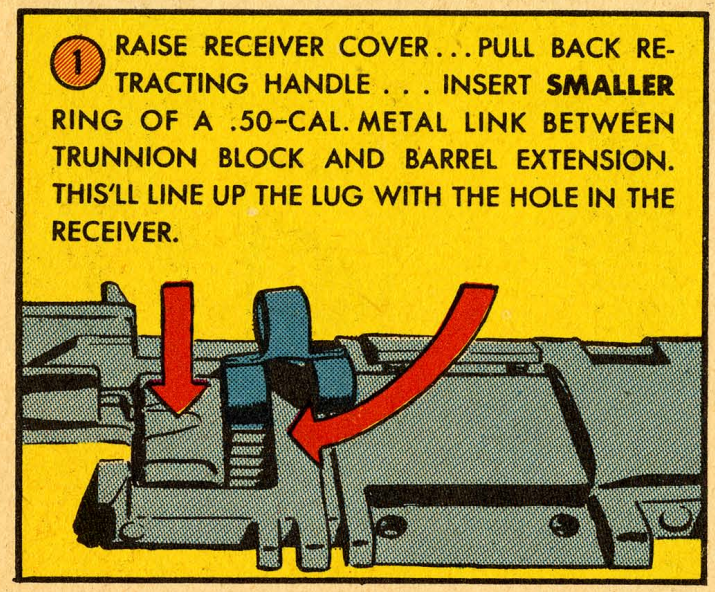
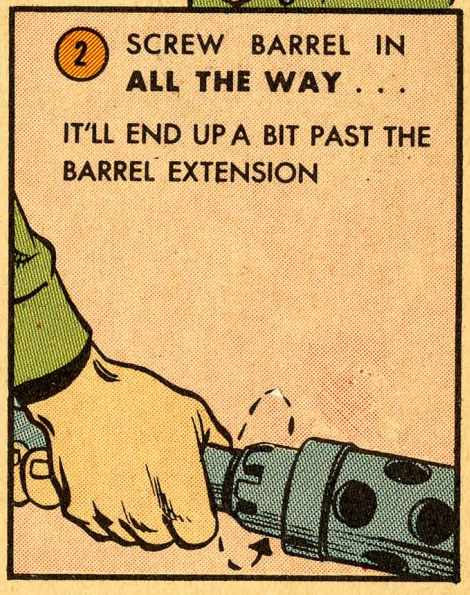
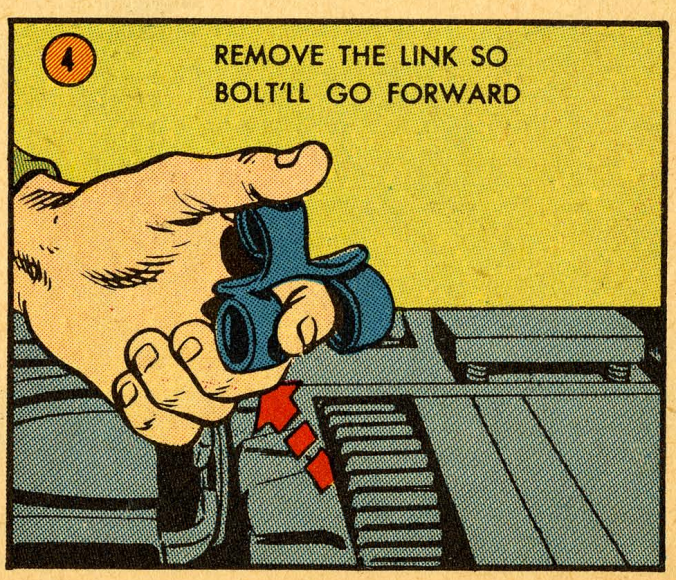




5 COCK YOUR WEAPON SO'S TO BE SURE FIRING PIN ISN'T STICKING THRU FACE OF BOLT

6 PULL RETRACTIN' HANDLE BACK JUST ENOUGH TO TAKE UP NORMAL SLACK

7 PUT GO END OF GAGE BETWEEN FACE OF BOLT AND BREECH

WHEN HEAD SPACE IS CORRECT . . .

GO SLIDES IN EASY WITHOUT PRESSURE

NO GO WON'T GO IN AT ALL

IF THE GO GAGE NEEDS PRESSURE TO SLIDE THROUGH ...OR WON'T GO IN AT ALL, THAT CALLS FOR MORE BACK-OFF CLICKS, ONE AT A TIME UNTIL THE GO GAGE SLIDES THROUGH EASY-LIKE!

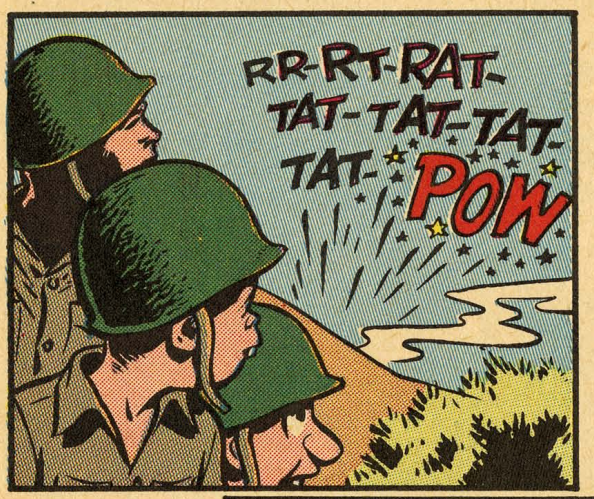
CLIK

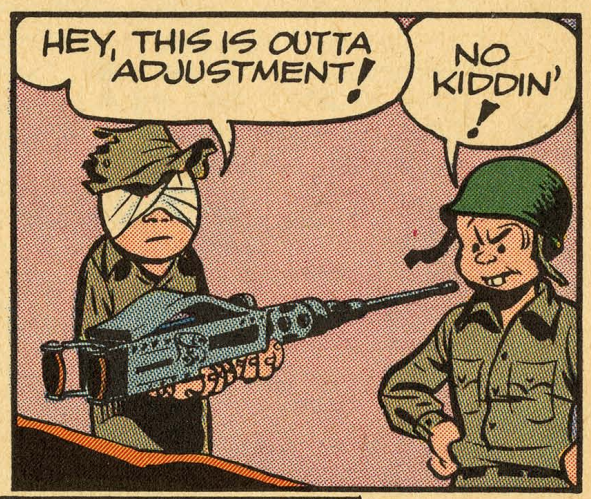
INSERT METAL LINK SPACER EACH TIME BEFORE ATTEMPTING TO TURN BARREL

IF THE NO-GO GAGE SLIDES THROUGH, YOU'VE TAKEN TOO MANY BACK-OFF CLICKS. SO YOU START ADJUSTING ALL OVER AGAIN FROM SCRATCH.

DOGGONE, IT'S SO DARK I CAN'T TELL WHICH END O' THE GAGE IS WHICH!

WELL, YOU JUST HAFTA KEEP TRYIN' THE GAGE UNTIL ONE END GOES IN AN' THE OTHER END WON'T!

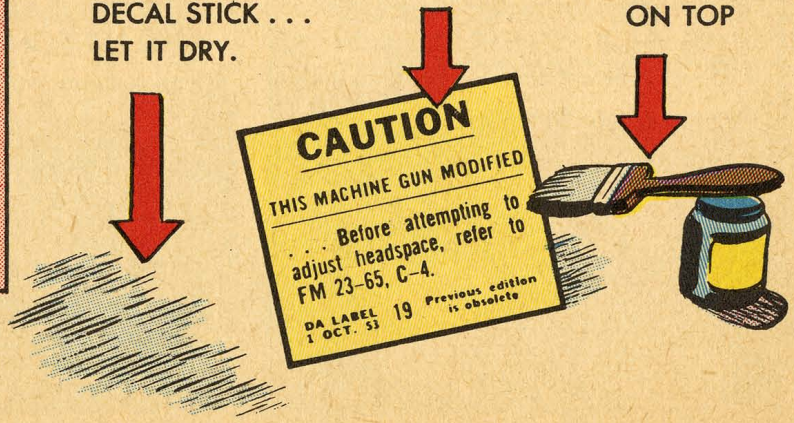



DAYLIGHT OR DARK . . . YOU CAN RELY ON THE GAGE—ANYTIME TO CHECK HEADSPACE

A **DECAL LABEL** BELONGS ON THE RECEIVER TOP-PLATE OF YOUR GUN . . . TO REMIND ANY STRANGERS ABOUT THIS NEW METHOD OF HEADSPACE ADJUSTMENT.

1. A COAT OF CLEAR LACQUER TO HELP THE DECAL STICK . . . LET IT DRY.
2. THEN APPLY DECAL.
3. ANOTHER COAT OF LACQUER ON TOP



## M74 HYDRAULIC LUBE QUIZ

*Dear Half-Mast,*

*You said in PS 16, that if we couldn't get Spec 2-79B hydraulic oil for our M74 Holt Monster JG's, to use OE 10 in temperatures down to -10° F. Trouble is that you didn't say whether the two oils would mix.*

*The M74 hydraulic oil tank holds about 80 gallons of oil. When we got the vehicles they had the Spec 2-79B oil in the hydraulic system. When the oil level went down thru use, and we tried to get the 2-79B—no dice. We don't want to drain all of that oil and put 80 gallons of OE 10 in (we've got 5 vehicles) if we can go ahead and add OE 10. What's the answer?*

*Sgt S. R. P.*

Dear Sgt S. R. P.,

One thing is certain—you don't mix OE 10 and the 2-79B.

Here's how to solve your problem: Completely drain the 2-79B from one of your wreckers. Careful, tho'—when you drain it, save it, 'cause you'll use this oil for the other four vehicles.

Make sure you don't get dirt in the oil when you're draining it. Put it in clean tight containers for storage. Take the vehicle you drained and fill it with OE 10.

When you use up all the stored 2-79B, drain another one and fill 'er with OE 10. Go right down the line like this until all the 2-79B's used. You've got it made. Be a good idea to mark which wrecker has which in it.

*Half-Mast*

## CROSS YOUR BRIDGES

*Dear Half-Mast,*

*The bridge markings on my M62 wrecker say "16". Shouldn't it read "16/23"?*

*Sgt W. E. McM.*

Dear Sgt W. E. McM.,

The reason you see only a "16" on your M62 is that fully equipped, it should be able to cross a bridge that can hold 16 tons. The "slash-23" would mean it's a vehicle that weighs 16 tons and, plus its pay-load of 7 tons, OK for a bridge that can take 23 tons.

But unlike a van or other carrier, the wrecker doesn't carry—it tows. So, the only measurement you need is the "16", then you add the total weight of its

hitch, and cross your bridges (that can take it) when you come to them.

# Half-Mast

## IN THE GROOVE

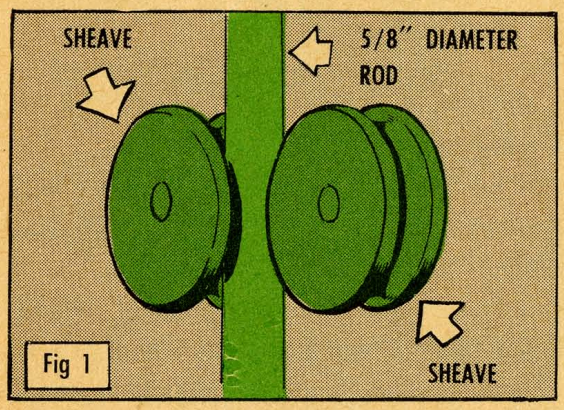
*Dear Half-Mast,*

*How can the cable be kept from coming out from between the sheaves on the M62 wrecker's rear-winch tensioner? Every time we do a heavy job we have that as an added headache.*

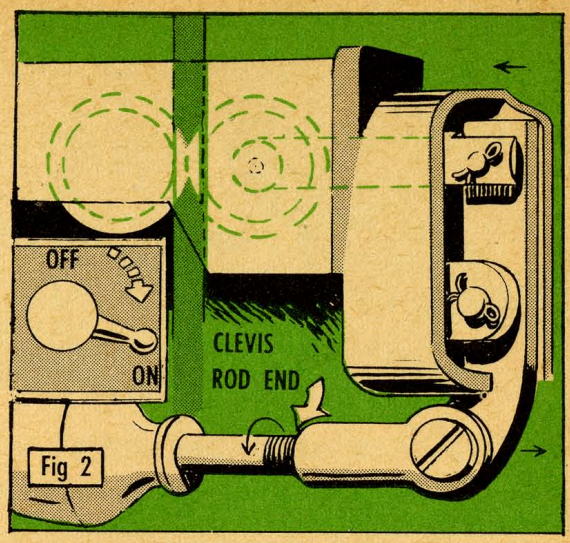
*Cpl D. D. B.*

Dear Cpl D. D. B.,

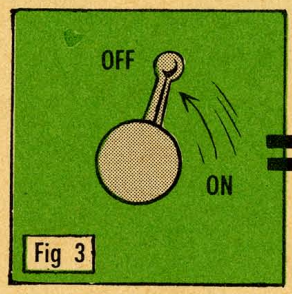
To keep your cable between the sheaves on the rear-winch tensioner, and not hippity-hopping about, you've got to get the sheaves adjusted right. And to do that, first lay a 5/8-in diameter rod between the sheaves (Fig 1).

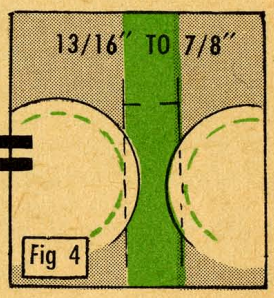



Then adjust the clevis-rod end on the air-cylinder attachment to the tensioner rocker-arm, so that when you put the tensioner air-valve into its ON position, you'll just close the sheave on the rod (Fig 2). That way, there'll be no less than 5/8-in space between the two sheaves in the engaged or SQUEEZE position. Which allows no more than 1/8-in play on the 3/4-in cable.



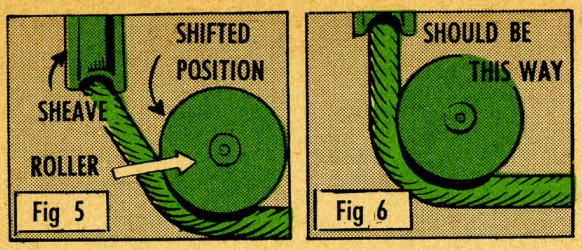

Now shift the tensioner control-valve into the OFF position (Fig 3) and measure the gap between the sheaves. That should be betwen 13/16-in and 7/8-in (Fig 4). The cable will then slide freely between the sheaves when you pay it out.




And always have the tensioner sheave air-control-valve in the ON position when paying in cable and OFF when paying it out.

Sometimes the sheaves are set a little too close or too far from the roller (Fig 5). This could put enough side-play in the rope to pull it from the sheaves. To fix this, simply move the sheave unit in the holding brackets, and give the rope the vertical pull it needs (Fig 6). If you can't move them enough, you'll have to make the bracket's holes longer. A round file is all you need for that job.




After you've done all that, you shouldn't have any trouble. For more dope see TM 9-8029 (Feb 54).

Half-Mast

## OIL COLOR

*Dear Half-Mast,*

*Can you tell whether the oil in your crankcase needs a change by checking the color of it on the dipstick? Some say you can. Some say you can't. How about it?*

*PFC D. J. R.*

Dear PFC D. J. R.,

Nope. You can't go by looks. Only way you can tell when to change engine oil is by watching the vehicle mileage and the lubrication chart for your particular vehicle. Of course, you've got different types of operation that will help determine oil change, too.

The oil you're using is a detergent type which does a washing job inside the engine. Before you know it, new and clean oil will look black.

When oil turns dark it's doing a good job of picking up and carrying dirt, carbon or waste products.

On the other hand, if the oil stays light in color or clear you can make a bet—that it's leaving the dirt or carbon on the inside of the engine instead of picking it up and carrying it to the crankcase.

Nope. You can't depend on your looks. Stick to the mileage, lube order and driving conditions for the when to change oil.

Half-Mast

## RUSTY BRAKE-CYLINDERS

*Dear Half-Mast,*

*Here in Puerto Rico we have found a lot of locked truck wheels, and almost all are caused by rusty brake-cylinders. In all our semi-annual inspections we find them locked on both sides by rust.*

*Can you tell me what causes this?*

*Sgt J. N.*

Dear Sgt J. N.,

Your trouble seems to be caused by salt air and dampness, and you've plenty of both in your locality.

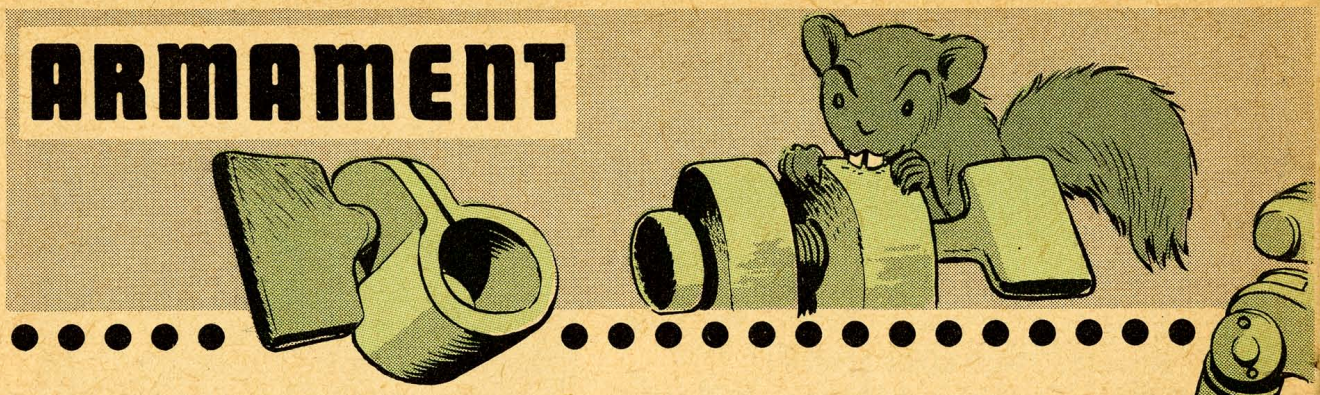
Your best bet would be to get Ordnance to inspect your cylinders more often than six months. Have them thoroughly cleaned (your master cylinder, too), and any rust removed by polishing with crocus cloth.

You can look for cracked or cut cylinder boots, and if you find any you'd better get them replaced. Also have the brake shoes checked to make sure they don't have deburred toes, 'cause those sharp edges are really troublemakers. Smooth off the sharp edges with a file.

Washing your vehicle by driving it into a shallow stream is a sure way of asking for trouble. You'll get rust in those brake cylinders for sure.

Half-Mast

# ARMAMENT

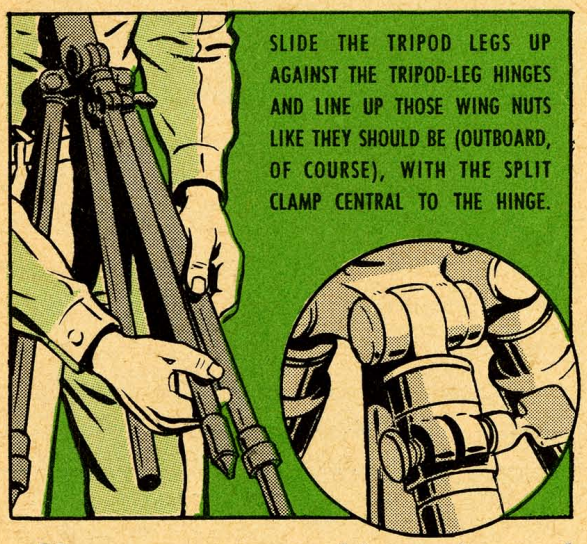


## AVOID CRUSHED NUTS

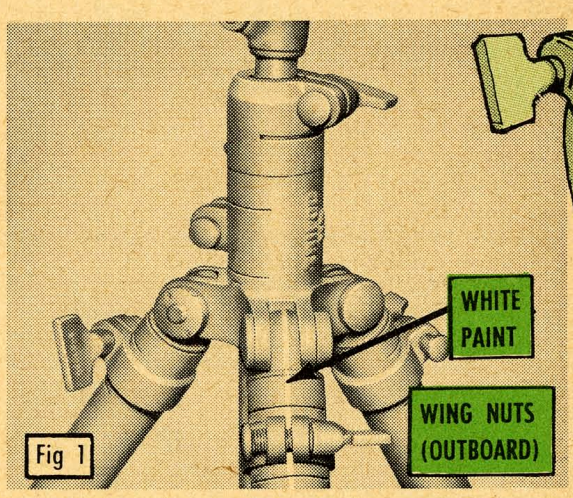
Nuts, nuts and more nuts—squirrel eatin' kind, wing nuts, and people (the ones that leave the wing nuts on their aiming circle's M5 tripod legs inboard when they close them).

So you won't be one, remember those wing nuts have to be in the front if you want to keep dents out of the center tube of your M5 tripod that's used with your M1 aiming circle.

And you'll not have to tie a string around your finger to remember if you do this—



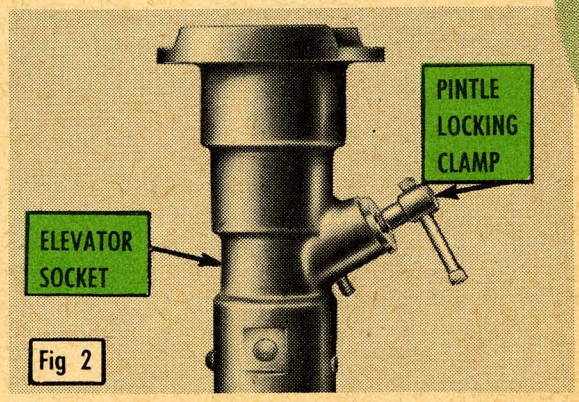

Now get out your white paint and paint a thin line thru dead center of clamp and hinge (Fig 1).




Those little white lines will tell you to line up those nuts before the legs are pushed together.

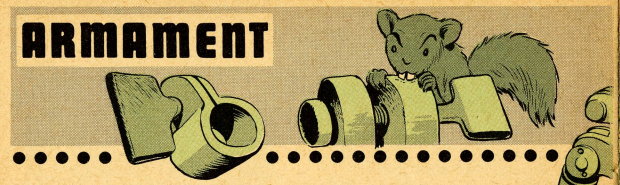
## 4-1/2—THAT'S PLENTY

You can't be too careful with that pintle-locking-clamp-screw (Fig 2)




when disassembling the M63 machine-gun mount. If you screw the handle out

# ARMAMENT



## AVOID CRUSHED NUTS

Nuts, nuts and more nuts—squirrel eatin' kind, wing nuts, and people (the ones that leave the wing nuts on their aiming circle's M5 tripod legs inboard when they close them).

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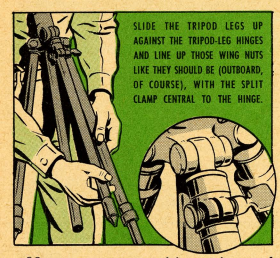


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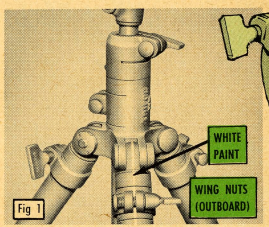
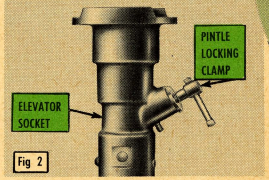


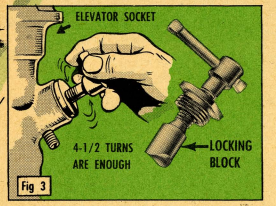

Those little white lines will tell you to line up those nuts before the legs are pushed together.

## 4-1/2—THAT'S PLENTY

You can't be too careful with that pintle-locking-clamp-screw (Fig 2)




when disassembling the M63 machine-gun mount. If you screw the handle out too far, the locking block (Fig 3) will snap off inside the elevator socket.




Four-and-a-half turns of the handle are enough to let you remove the pintle from the elevator socket without breaking the lock. So—**4-1/2**—that's enough.

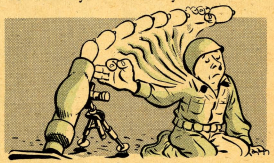
## HOLD YOUR ROD

Seems like some operating rods (M1 rifle variety) are being turned in and considered obsolete when there's still plenty of zip left in the old piece.

Rifles without the new relief cut in the rod assembly are still gonna be used until they're rejected for wear on the piston or other causes—not because they're minus a relief cut. Hang on to it—give it a chance to do its job.

## TOO GOOD

OK. So you're the slickest mortar feeder in this man's army. Smooth, fast, automatic delivery. Watch it, tho'. You may be too good. That automatic motion can buy you some trouble if you don't have your mind on your business.



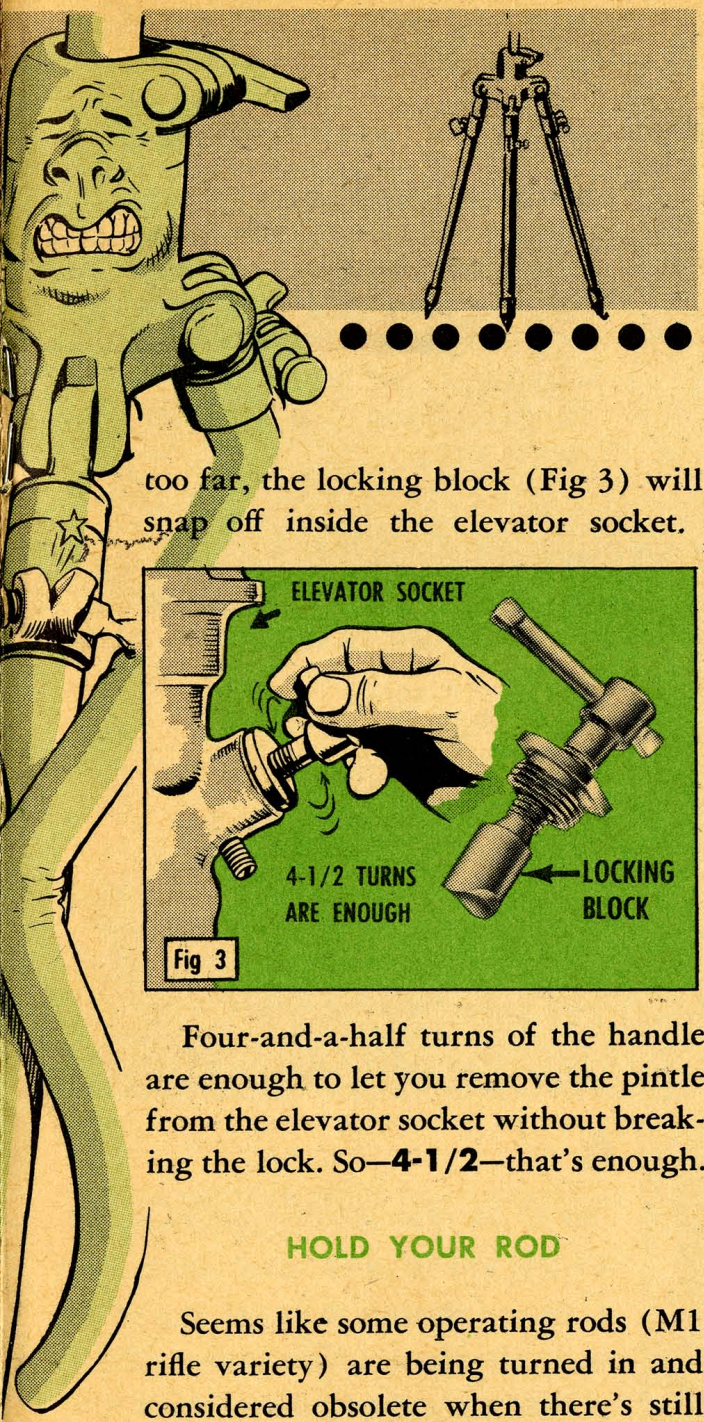
You have to make sure one round comes out before you feed in the next one. Two shells in the tube can be as dangerous as two aces up your sleeve and a hole in your shirt. That's just not with it, man.

Just one at a time . . . **one-at-a-time.**

## THE BRUSH OFF

There's no use asking for the .30-cal. cleaning brush M31, Ord Stock No. B0 28-7160000, 'cause you won't get it. This is the comb-like, bristle-type brush that's used for dusting your piece.

This little number's being deleted from supply. Now's the time to make a mental note so you'll not order something you can't get.



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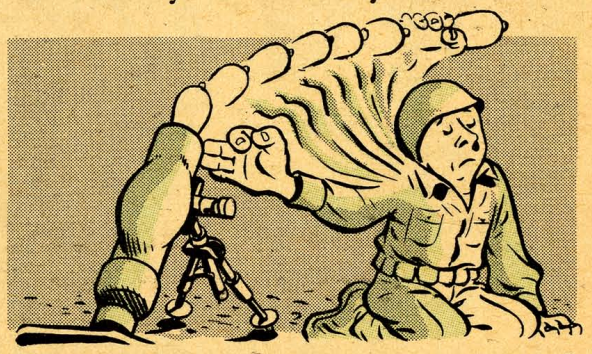

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This little number's being deleted from supply. Now's the time to make a mental note so you'll not order something you can't get.

# HOLD IT!

DON'T FIRE TILL YOU SEE. . . THAT YOUR 60-MM MORTAR M19 HAS IT'S FIRING MECHANISM PUT TOGETHER RIGHT

YOUR STOVEPIPE MIGHT BACKFIRE IF THAT FIRING MECHANISM'S NOT SEATED AGAINST THE BASE CAP. SOMETIMES IT CAN FOOL YOU—YOU SCREW IT, WITH THE STRIKER RESTING ON THE EDGE OF THE SELECTOR, AND YOU THINK IT'S GONE HOME —BUT IT HASN'T. JUST TO MAKE SURE YOU'VE GOT WHAT'S SUPPOSED TO GO WHERE—HERE'S WHAT TO DO.

**3** REPLACE THE FIRING PIN BUSHING.

NOW REPLACE HOUSING PIN ADAPTER IN BASE CAP BY SLIDING IT DOWN THE BARREL.

**6**

PICK UP THE FIRING MECHANISM HOUSING IN YOUR LEFT HAND WITH THE RAISED SQUARE SURFACE UP AND THE SPHERICAL PROJECTION TO THE REAR. HOLD THE TRIPPER (NO WORN ONES, PLEASE) IN YOUR RIGHT HAND WITH THE POINT DOWN AND FLAT CAM SURFACE TO THE FRONT. STICK IT IN THE RECTANGULAR HOLE IN THE FLAT SURFACE OF THE HOUSING. START THE POINTED CAM IN FIRST.

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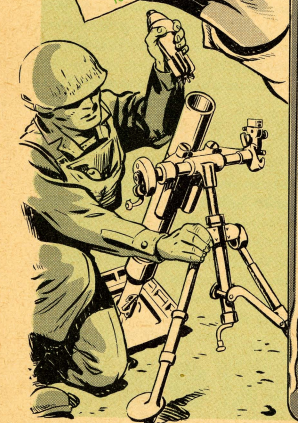
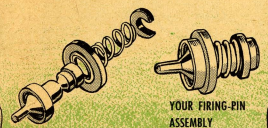


YOUR STOVEPIPE MIGHT BACKFIRE IF THAT FIRING MECHANISM'S NOT SEATED AGAINST THE BASE CAP. SOMETIMES IT CAN FOOL YOU—YOU SCREW IT, WITH THE STRIKER RESTING ON THE EDGE OF THE SELECTOR, AND YOU THINK IT'S GONE HOME—BUT IT HASN'T. JUST TO MAKE SURE YOU'VE GOT WHAT'S SUPPOSED TO GO WHERE—HERE'S WHAT TO DO.

**1** PLACE THE STOP WASHER, THEN RETRACTING SPRING ON REAR SHANK OF FIRING-PIN. LOCK IN PLACE WITH FIRING-PIN LOCK.



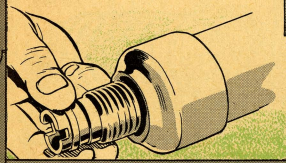
YOUR FIRING-PIN ASSEMBLY

**2** PLACE THIS ASSEMBLY IN THE MUSHROOM END OF THE HOUSING ADAPTER.

**3** REPLACE THE FIRING PIN BUSHING.

NOW REPLACE HOUSING PIN ADAPTER IN BASE CAP BY SLIDING IT DOWN THE BARREL.

**4** TRE SLOTTED COLLAR SHOULD STICK OUT FROM THE BASE CAP.



**5** SCREW COUNTER-CLOCKWISE TILL IN PLACE. USE WRENCH (ORD STOCK NO. 7230830) WITH HANDLE (ORD STOCK NO. 7230831) TO MAKE SURE IT'S TIGHT.

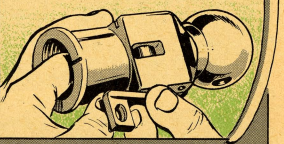
**6**

PICK UP THE FIRING MECHANISM HOUSING IN YOUR LEFT HAND WITH THE RAISED SQUARE SURFACE UP AND THE SPHERICAL PROJECTION TO THE REAR. HOLD THE TRIPPER (NO WORN ONES, PLEASE) IN YOUR RIGHT HAND WITH THE POINT DOWN AND FLAT CAM SURFACE TO THE FRONT. STICK IT IN THE RECTANGULAR HOLE IN THE FLAT SURFACE OF THE HOUSING. START THE POINTED CAM IN FIRST.

**7**

**(THIS IS A MIGHTY IMPORTANT PART—BE SURE THAT CAM GOES IN RIGHT.)**

**8** HOLD TRIPPER IN PLACE FROM INSIDE WITH LEFT INDEX FINGER. REPLACE FIRING LEVER IN HOLE ON LEFT WITH LEVER ARM UP AND TO THE FRONT.



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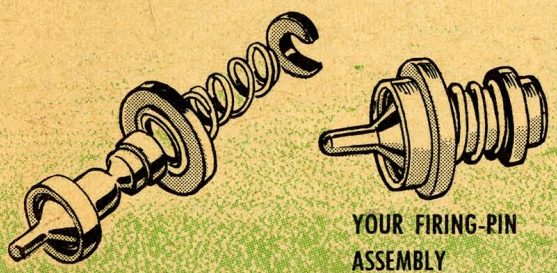

YOUR FIRING-PIN ASSEMBLY

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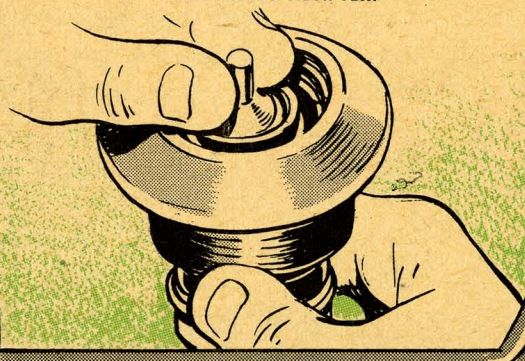
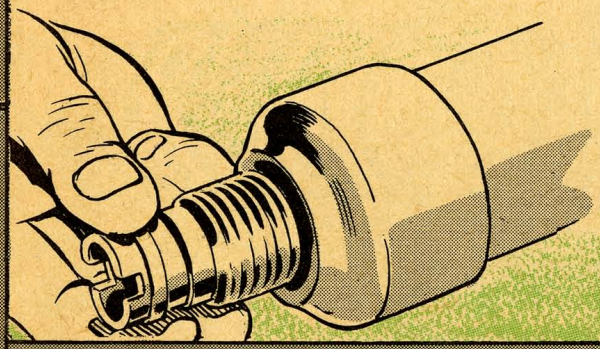


**4** THE SLOTTED COLLAR SHOULD STICK OUT FROM THE BASE CAP.



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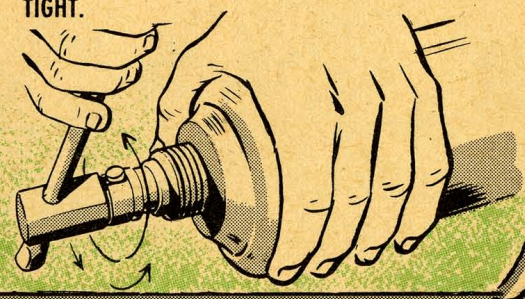

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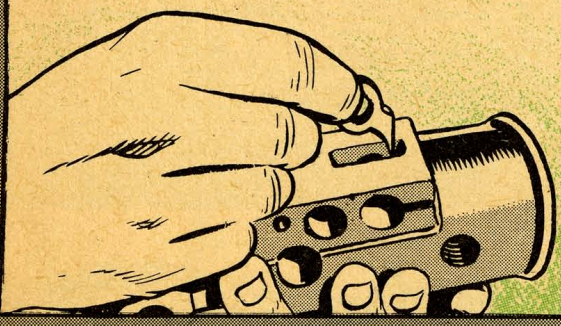
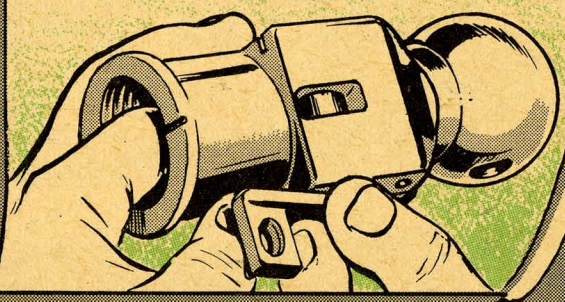
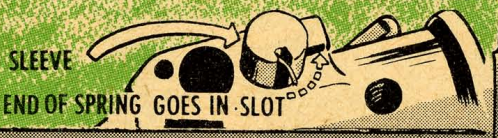


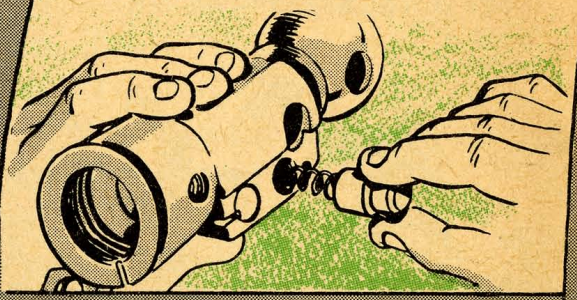
**8** HOLD TRIPPER IN PLACE FROM INSIDE WITH LEFT INDEX FINGER. REPLACE FIRING LEVER IN HOLE ON LEFT WITH LEVER ARM UP AND TO THE FRONT.



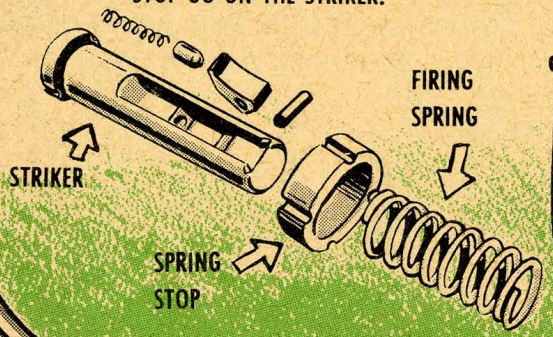
**9** YOU REPLACE THE FIRING LEVER SPRING AND SLEEVE IN THE UPPER FORWARD HOLE IN THE RIGHT SIDE OF THE HOUSING. THE LEFT END OF THE SPRING SHOULD BE ENGAGED IN THE SLOT IN THE FIRING LEVER, AND THE RIGHT END AWAY FROM THE SLOT IN WHICH IT SETS. ROTATE THE SLEEVE COUNTER-CLOCKWISE TILL END OF SPRING FITS IN SLOT. AT THIS TIME YOUR FIRING LEVER SPRING SLEEVE SHOULD BE FLUSH WITH THE SURFACE OF THE HOUSING.



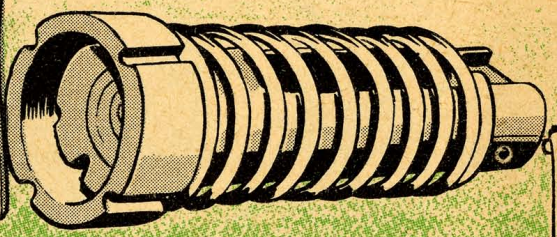

**10** IF SELECTOR PLUNGER AND SPRING HAVE BEEN REMOVED, REPLACE IN REAR UPPER HOLE.



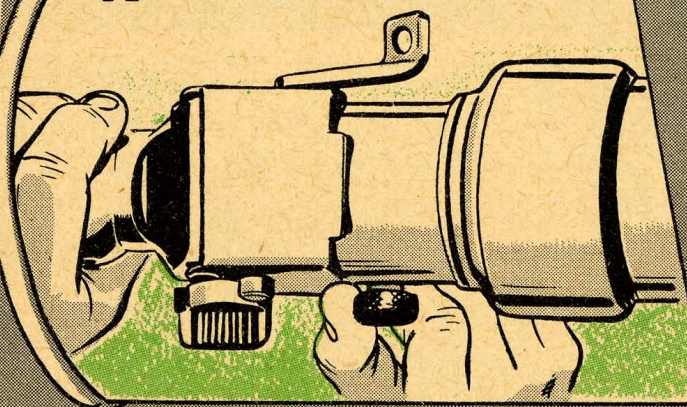
**13** THE FIRING SPRING AND SPRING STOP GO ON THE STRIKER.



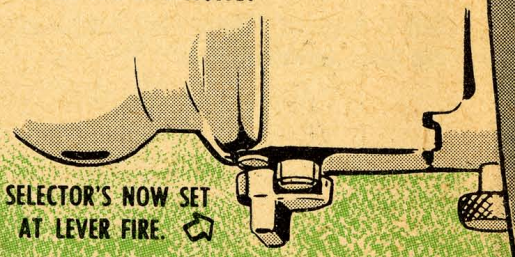

**14** THE SPRING STOP SLEEVE MUST STICK OUT BEYOND THE FACE OF THE STRIKER.



**17** PUT THE LOCK SCREW IN AND TIGHTEN IT.



**18** TURN FIRING SELECTOR TO **LEVER FIRE**—UP AND DOWN POSITION—IF PLUNGER IS **NOT NOW IN RECESS, CHECK YOUR TRIPPER 'CAUSE IT'S IN WRONG.**



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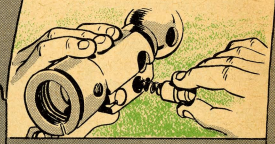
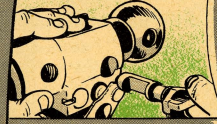


**11** NOW PRESS THE SELECTOR PLUNGER IN FLUSH WITH THE HOUSING SURFACE WHILE REPLACING THE HOUSING COVER AND PIN. IF THE PIN IS DRIFTED IN FROM RIGHT TO LEFT, IT WON'T GET LOST. IF IT'S PUT IN FROM LEFT TO RIGHT, IT COULD DROP OUT WHEN ASSEMBLED.

**12** THE FIRING SELECTOR GOES IN LOWER HOLE ON RIGHT SIDE OF HOUSING—CLOSE COVER BEFORE PARTS FALL OUT.



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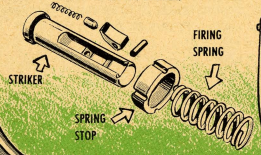


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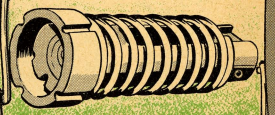
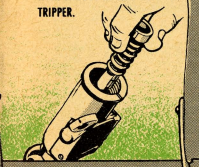
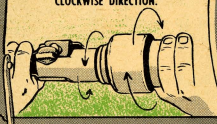


**15** PLACE STRIKER IN HOUSING WITH GROOVE IN LINE WITH THE TRIPPER.



**16** SET FIRING SELECTOR AT **DROP FIRE**. SCREW COMPLETE FIRING MECHANISM HOUSING ASSEMBLY TIGHT TO HOUSING ADAPTER IN CLOCKWISE DIRECTION.



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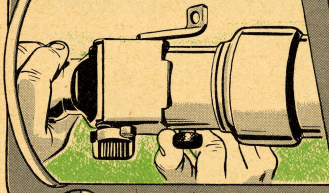
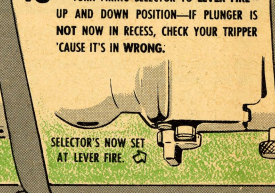
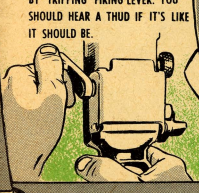


**18** TURN FIRING SELECTOR TO **LEVER FIRE**—UP AND DOWN POSITION—IF PLUNGER IS **NOT** NOW IN RECESS, CHECK YOUR TRIPPER 'CAUSE IT'S IN **WRONG**.



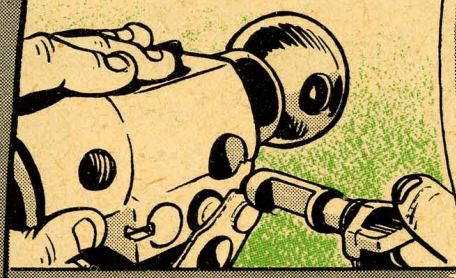

**19** TEST FIRING MECHANISM BY TRIPPING FIRING LEVER. YOU SHOULD HEAR A THUD IF IT'S LIKE IT SHOULD BE.



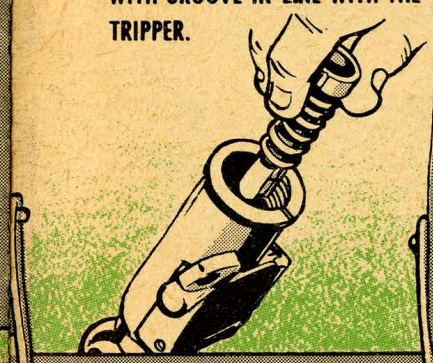
CAUTION:
CONSTANT TRIPPING WILL CAUSE WEAR AND WILL BREAK YOUR FIRING PIN!

**11** NOW PRESS THE SELECTOR PLUNGER IN FLUSH WITH THE HOUSING SURFACE WHILE REPLACING THE HOUSING COVER AND PIN. IF THE PIN IS DRIFTED IN FROM RIGHT TO LEFT, IT WON'T GET LOST. IF IT'S PUT IN FROM LEFT TO RIGHT, IT COULD DROP OUT WHEN ASSEMBLED.

**12** THE FIRING SELECTOR GOES IN LOWER HOLE ON RIGHT SIDE OF HOUSING—CLOSE COVER BEFORE PARTS FALL OUT.



**15** PLACE STRIKER IN HOUSING WITH GROOVE IN LINE WITH THE TRIPPER.



**16** SET FIRING SELECTOR AT **DROP** FIRE. SCREW COMPLETE FIRING MECHANISM HOUSING ASSEMBLY TIGHT TO HOUSING ADAPTER IN CLOCKWISE DIRECTION.

**19** TEST FIRING MECHANISM BY TRIPPING FIRING LEVER. YOU SHOULD HEAR A THUD IF IT'S LIKE IT SHOULD BE.

CAUTION:
CONSTANT TRIPPING WILL CAUSE WEAR AND WILL BREAK YOUR FIRING PIN!

On Tire Chains—

# YOU DON'T HAVE TO BE A SECOND GUESSER

When spring has sprung, comes another big turnover in tire chains. And the moans and groans of guys trying to keep their identification straight are about as loud as the clamor for chains that follows the first autumn snow.

Usually at least one good identifying clue, the tire size, has been stamped on the inside hook of the chain. But this gets scratched, bent, worn, rusty and otherwise hard to make out. So—identifying chains can become largely a matter of second-guessing.

Here's a chart that can be a lotta help in sweating out just which is which. When identification's lost, just make some quick measurements of the length of the cross chains (Fig 1), count the links, also the number of cross chains—then check the chart for the corresponding tire size and/or stock number.

In most cases, just this cross chain data will identify the item for you. However, now and then you may have to check the side chain dimensions too.

Of course, the measurements won't be exact on used chains because of stretching and bending. But they'll be close enough to beat raw guessing by a long shot.

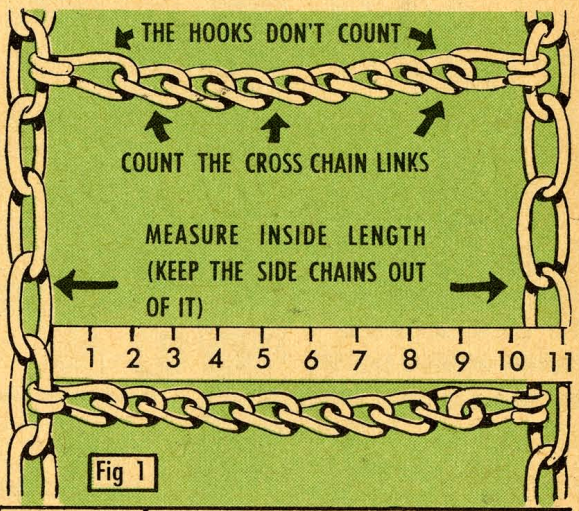
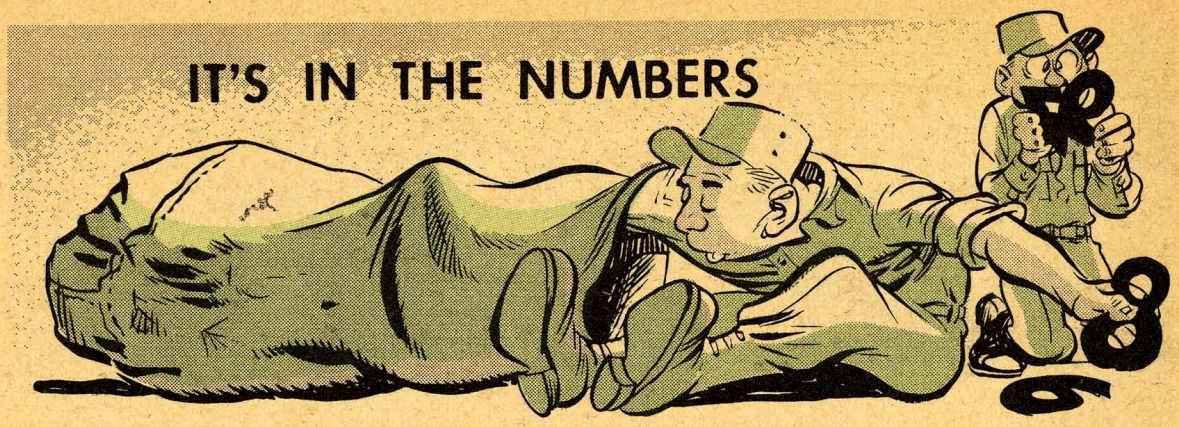


Fig 1

| Ord | Stock No. | Tire Size | SIDE CHAINS Length W/Hook | SIDE CHAINS No. of Links | CROSS CHAINS No. per ½ pair | CROSS CHAINS Inside Length | CROSS CHAINS No. of Links |
|---|---|---|---|---|---|---|---|
| | | TYPE TS (TRUCK, SINGLE) | | | | | |
| | H014-0540013 | 6.00x16 | 68.1" | 38 | 9 | 12.55" | 9 |
| | H014-0540014 | 6.50x16 | 72.4" | 42 | 10 | 12.55" | 9 |
| | H014-0540015 | 7.00x20 | 84.7" | 45 | 11 | 15.15" | 11 |
| | H014-0540016 | 7.50x16 | 74.3" | 41 | 10 | 15.15" | 11 |
| | H014-0540017 | 7.50x17 | 81.2" | 45 | 11 | 15.15" | 11 |
| | H014-0540018 | 7.50x20 | 89.9" | 50 | 12 | 15.15" | 11 |
| | H014-0540020 | 8.25x16 | 82.9" | 46 | 11 | 16.25" | 12 |
| | H014-0540021 | 8.25x20 | 92.0" | 49 | 12 | 16.25" | 12 |

| | | SIDE CHAINS | | CROSS CHAINS | | |
|---|---|---|---|---|---|---|
| Ord Stock No. | Tire Size | Length W/Hook | No. of Links | No. per ½ pair | Inside Length | No. of Links |
| H014-0540022 | 9.00x16 | 81.2" | 45 | 11 | 17.35" | 13 |
| H014-0540023 | 9.00x20 | 96.8" | 54 | 13 | 17.35" | 13 |
| H014-0540024 | 10.00x20 | 103.7" | 58 | 14 | 17.35" | 13 |
| H014-0540025 | 10.00x22 | 106.5" | 57 | 14 | 17.35" | 13 |
| H014-0540026 | 10.00x24 | 113.7" | 61 | 15 | 17.35" | 13 |
| H014-0540027 | 11.00x20 | 97.3" | 49 | 12 | 20.75" | 14 |
| H014-0540028 | 12.00x20 | 102.7" | 54 | 13 | 22.00" | 15 |
| H014-0540029 | 12.00x24 | 115.6" | 61 | 15 | 22.00" | 15 |
| H014-0540030 | 14.00x20 | 112.7" | 57 | 14 | 24.5" | 17 |
| H014-0540031 | 14.00x24 | 128.1" | 65 | 16 | 24.45" | 17 |
| | **TYPE P (PASSENGER CAR)** | | | | | |
| H014-0540039 | 5.50x16 | 69.3" | 54 | 13 | 10.00" | 8 |
| H014-0540040 | 6.00x16 | 69.3" | 54 | 13 | 11.10" | 8 |
| H014-0540041 | 6.50x15 | 69.3" | 54 | 13 | 11.10" | 8 |
| H014-0540042 | 6.25x16 | 74.3" | 58 | 14 | 11.10" | 8 |
| H014-0540042 | 6.50x16 | 74.3" | 58 | 14 | 11.10" | 8 |
| H014-0540043 | 7.00x15 | 69.3" | 54 | 13 | 12.95" | 10 |
| H014-0540044 | 7.00x16 | 71.8" | 54 | 13 | 12.95" | 10 |
| H014-0540044 | 7.50x15 | 71.8" | 54 | 13 | 12.95" | 10 |
| H014-0540045 | 7.50x16 | 75.6" | 59 | 14 | 12.95" | 10 |
| | **TYPE MC (MOTORCYCLE)** | | | | | |
| H014-0540036 | 3.50x18 | 66.3" | 54 | 13 | 8.00" | 8 |
| H014-0540037 | 4.00x18 | 67.1" | 53 | 13 | 9.15" | 7 |
| H014-0540038 | 4.50x18 | 69.7" | 53 | 13 | 9.15" | 7 |
| H014-0540038 | 5.00x16 | 69.7" | 53 | 13 | 9.15" | 7 |
| | **TYPE TD (TRUCK, DUAL)** | | | | | |
| H014-0540001 | 6.50x20 | 90.7" | 53 | 24 | 12.55" | 8 |
| H014-0540002 | 7.00x20 | 90.2" | 48 | 22 | 14.05" | 10 |
| H014-0540003 | 7.50x16 | 82.9" | 44 | 20 | 14.05" | 10 |
| H014-0540004 | 7.50x20 | 95.1" | 53 | 24 | 14.05" | 10 |
| H014-0540005 | 8.25x20 | 99.2" | 53 | 24 | 15.15" | 11 |
| H014-0540006 | 9.00x20 | 102.0" | 57 | 26 | 16.25" | 12 |
| H014-0540007 | 10.00x20 | 108.9" | 61 | 28 | 16.25" | 12 |
| H014-0540008 | 10.00x22 | 115.9" | 65 | 30 | 16.25" | 12 |
| H014-0540009 | 10.00x24 | 122.8" | 69 | 32 | 16.25" | 12 |
| H014-0540010 | 11.00x24 | 108.2" | 57 | 26 | 19.55" | 13 |
| H014-0540011 | 12.00x24 | 126.2" | 64 | 30 | 19.55" | 13 |
| H014-0540012 | 14.00x24 | 141.5" | 72 | 34 | 22.00" | 15 |

# IT'S IN THE NUMBERS



There'll be no more fumblin' around looking for numbers of automotive (G-Group) technical manuals if you grab a pencil and jot these down. (With these exceptions which got out of kilter: TM 9-7004—155-mm self-propelled How M44; TM 9-7005—155-mm self-propelled How M44; TM 9-7417-1—76-mm gun motor carriage).

| TM 9– | | TM 9– | |
|---|---|---|---|
| 7000-7099 | Tanks | 8600-8699 | Component Manuals. These will have odd numbers only. These numbers will be used for: (a) similar type components built by one manufacturer, example: electrical equipment (Auto-Lite), (b) all items of one type, example: fuel pumps. |
| 7200-7299 | Self-Propelled Artillery | | |
| 7400-7499 | Miscellaneous Tracked Vehicles (including bulldozers, excluding amphibian) | | |
| 7600-7699 | Amphibious Vehicles (tracked and wheeled) | | |
| 8000-8099 | Trucks | | |
| 8200-8299 | Trailers, Semitrailers | 8800-8898 | Commercial operator's manuals. These will have even numbers only. |
| 8400-8499 | Miscellaneous Wheeled Vehicles (motorcycles, motor scooters, etc.) | | |

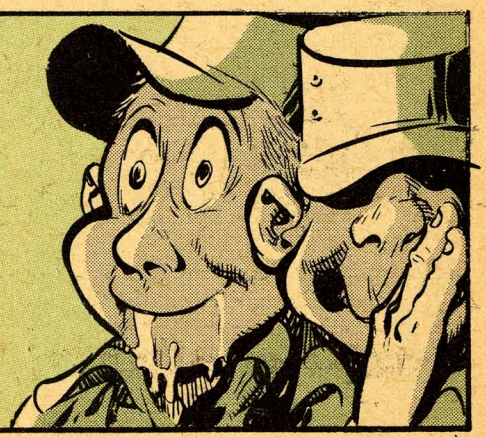
As other numbers are assigned, they'll be listed in PS Magazine.

Just to keep the record straight, operator's manuals (1st and 2nd-echelon) have even numbers and maintenance manuals (higher echelon) have odd numbers.

The new numbers will progressively take over all new manuals and revision of old manuals will pick up the new numbers when published.

## WANNA GOOD NUMBER??

The listings in PS starting with Issue No. 21 and SR 310-20-29 (Jan 54), with its Change 2 (14 Sept 54) will keep you posted right up to the minute on your SNL listings. To stay there, every month add to your list from "The Scoop" section of PS.



# THE SCOOP

## HERE'S A LIST OF ADDITIONAL OFFICIAL PUBLICATIONS ON ORDNANCE EQUIPMENT WHICH ARE OF INTEREST TO A LOT OF YOU.

### SNL'S

**Ord 8 SNL A-78 (TO 11W2-8-10-4),** .30-cal. ball, mnt, (7722408), Sep 54

**Ord 9 SNL A-86,** M74, wpon, tripod, mnt, Aug 54

**Ord 7 SNL A-91,** .60-cal., T130E3: gun, auto; gun, auto, 20-mm, T160E3; gun, auto, .60-cal., M38, (T130E4), gun, auto, 20-mm, M39 (T160E4 and M39A1), Aug 54

**Ord 9 SNL A-93 Sec 1,** .50-cal. AA, MG, mnt, (7364875), Aug 54

**Ord 9 SNL A-93 Sec 2,** .50-cal. AA, MG, mnt, (8346119), Aug 54

**Ord 8 SNL C-64,** 76-mm gun, M1A1C, M1A2; M62 gun, mnt, combo, Sep 54

**Ord 7 SNL C-74 (TO 39A-5BE-5),** Rifle, 75mm, M20 and T21E12, Aug 54

**Ord 8 SNL F-149 (TO 11W2-10-1-104),** Instrument, azim M1, M1918A2, Aug 54

**Ord 9 SNL F-205, Vol 1,** Light, aim post, M14, M41, Sep 54

**Ord 8 SNL F-209,** Director, AA, M5A2, M5A3, Aug 54

**Ord 8-9 SNL F-235, Vol 18,** Peri, T25, T36, Sep 54

**Ord 8 SNL F-324 (TO 11W2-17-2-4),** 'Scope adapter, M9, M9A1, Aug 54

**Ord 8 SNL F-346,** Thermo, powder temp, M1, M1A1, Aug 54

**Ord 9 SNL F-362,** Sight, bore, T150, Aug 54

**Ord 8 SNL F-364,** 'Scope, mnt, M92 (T178), T178E1, Aug 54

**Ord 8 SNL F-374,** 'Scope, T150E1, Aug 54

**Ord 9 SNL F-381,** 'Scope, mnt, T181, Aug 54

**Ord 8 SNL F-385,** 'Scope, mnt, T191, Sep 54

**Ord 9 SNL G-249, Vol 25,** Winteriz kit for tractor, h-s, 38-t, M6, Aug 54

**Ord 7 SNL G-262,** M47, 90-mm gun, tank, Aug 54

**Ord 9 SNL G-265,** M4 tank mounting, bulldozer, Jul 54

**Ord 8 SNL G-280,** M59, inf veh, armored, tracked, Aug 54

**Ord 6 SNL J-33,** Tool Set, field, spec, ord ball and tech svc team (41-T-3499-715), Jul 54

**Ord 7-8 SNL J-531 (TO 32B2-23-4),** Drill, elec, port, 115-v, hd, 3/8-in cap (Mall Tool mod 381) (40-D-343) and Drill, w/vert stand, 3/8-in cap (Mall Tool mod 381 w/no 28710 stand) (40-D-344), Sep 54

**Ord 7-8 SNL J-664,** Collimator, dbl (18-C-1279-25), Aug 54

**Ord 7-8 SNL J-729,** Cleaner, parts, mech, solvent type, motor dr (Sparkless), 110-v, cap 12 gal, 36-in long, 18-in wide, 20-in deep (Topper Equipment, Circo Mod 36-1) (40-C-1009-5), Sep 54

### TM'S

**TM 9-1005,** Ord preserv, packaging, packing, storage, shipping, Aug 54

**TM 9-1836-1 (TO 19-75AFH-8),** 4-Litter auto ambul (Cadillac-Sup mod 1951), Apr 53

**TM 9-2310 (TO 39A-5-2),** .60-cal. auto guns M38 (T130E4) and T130E3 and 20-mm auto guns M39 (T160E4), T160E3, Sep 54

**TM 9-6127,** Remote contrl sys M15 for 40-mm gun carr M2A1, Jul 54

**TM 9-6129,** Azim instr M1 and M1918A2, Sep 54

**TM 9-8015-2 (TO 19-75CAJ-5),** Power train body, frame for 1/4-ton M38A1 truck, Aug 54

**TM 9-8216,** 12-ton 4-wh gas tank semitrailer M131, Sep 54

**TM 9-9031-2,** 1-1/4-in rev port pneu drill (Thor Power Tool mod HMH-5130) (40-D-453), Aug 54

### ORD MWO'S

**A6-W15,** .30-cal. MG, M1919A6: Positive lock for flash hider M7, **O,** Aug 54

**D48-W2,** 75-mm Gun T83 series on 75-mm AA gun mount T69: Stronger breech interlock, **O,** Aug 54

**F321-W1,** Comput sight M19A1 on 40-mm gun carr M2A3: Remove stop pad w/o remove compute sight M19A1, **F,** Sep 54

**F342-W1,** AAA FCS M33C, M33D, T33C, and T33D: Apply field changes to correct deficiencies, to insure optimum perform, **F,** Aug 54

**F350-W2,** FCS T38: Proper positioning of peri T33 when rotated from stowed to oper pos, **F,** Sep 54

**F350-W4,** FCS T38: Field change No. 50 to radar tracker T9, serial No. 1-500, to increase rise time of magnetron drive pulse, **F,** Aug 54

**G1-W53,** M46 tank, M46A1, M47: Drain holes, hull phone box, **F,** Jul 54

**G1-W54,** 1/4-ton 4x4 trucks M38, M38A1: Install new eng tim indicator, **F,** Sep 54

**G179-W9,** Amphi crgo carrier M29C, C M29: Acceler cntrl, will not freeze, become inoper at low temp, **F,** Aug 54

**G260-W14,** M75 Trk arm inf veh (T18E1); Hull modif, **F,** Sep 54

**G260-W15,** M75 Trk arm inf veh (T18E1): Provid door stop, elim sfty haz opening hull roof doors, **F,** Sep 54

**G742-W16,** 2-1/2-ton 6x6 trucks M34, M35, M47, M49, M50, M59, M108, M109, V17A/MTQ, V18A/MTQ; chassis M44, M45, M46; truck-tractors M48 and M275: Install support for trnsfr case tp cov gskt, **F,** Aug 54

**G742-W17,** 2-1/2-ton 6x6 truck chassis M44, M45, M46; trucks M34, M35, M108, M47, M59, V-18A/MTQ (Signal Corps), M109, M49, M50, V-17A/MTQ (Signal Corps), truck tractors M48, M275: Improv oil cntrl, eng Mod 331-OA, **D,** Sep 54

**G742-W18,** 2-1/2-ton 6x6 trucks M34, M35, M47, M49, M50, M59, M108, M109, M110; chassis M44, M45, M46; truck-tractors M48, M275: Prevent acc engag frnt whl driv, **F,** Sep 54

**G744-W4,** 5-ton 6x6 truck chassis M40, M61, M63, M139, trucks M41, M54, M55, M64, M51, M62, M246, M52: New trnsmsn oil filler hole, **O,** Aug 54

**G744-W13,** 5-ton 6x6 dump Truck M51: Reinforc dump body, hinge brkt, **F,** Aug 54

**G744-W15,** 5-ton 6x6 truck chassis M40, M61, M63, M139, trucks M41, M54, M55, M64, M51, M62, M246, M52: Install lock nuts, prevent loosen clutch release lever adj nuts, **F,** Sep 54

**G788-W4,** 4x2 36-pass integral bus (Twin-Coach, Model F-32-F): Replac dist air clnr (breather) with vent line, **F,** Aug 54

**J6-W1,** Convert lift sling 41-S-3832-46 to 41-S-3832-23, **F,** Aug 54

### TB'S

**TB 9-718B-2,** M48 tank: Identify nonballistic hulls, **O,** Sep 54

**TB 9-819A-16,** 2-1/2-ton 6x6 trucks M135, M211, M215, M222, M217, M220, M221: Mount genrtr adj arm, **O,** Aug 54

**TB 9-837-6,** 5-ton 6x6 trucks, M41, M54, M55, M64, M51, M62, M52, Tractor Wrecker M246: Overspeed eng **O,** Sep 54

**TB 9-840-16 (TO 19-75AA-161),** 3/4-ton 4x4 trucks M37, M42, M43, V-41 /GT (Dodge): Brk lin replac, **O,** Sep 54

**TB 9-2010-1,** Multiple .50-cal. MG trlr mnt M55: Install loading aid kit—on trucks M35, M211, **F,** Aug 54

**TB 9-2855-32,** Install power plant heat kit, M46 tank, **D,** Jul 54

**TB 9-2855-34,** Install power plant heat kit, 38-ton tractor M6, **F,** Sep 54

**TB 9-2855-35,** Install hard-top closure kit 38-ton tractor M6, **O,** Aug 54

**TB 9-8816-12 (TO 19-75CBE-7),** 37-pass 4x2 integral Bus (Southern Coach Company Model S-36-M): Fog lamp replac, **O,** Sep 54

**TB Ord 419,** Use of fuze, VT, T225, T226, T227, Sep 54

**TB Ord 567,** Cartridge, AP-T, M81, M81A1, for 40-mm guns: Use dipcoat seal cmpd to produce trace, **D,** Aug 54

**TB Ord 570,** 1/4-ton 4x4 trucks: Front axle non-driv flanges, temporary convert four-wheel to two-wheel drives, **D,** Aug 54

**TB Ord 571,** M46 Tank, M46A1, M47: Remov final drive assy w/o remov power plant, **F,** Sep 54

**TB Ord 572,** 200-KG gage test outfit 7120217: Setup, opr, **O,** Sep 54

**TB Ord 573,** 2-1/2-ton 6x6 trucks M135, M211, M215, M217, M220, M221, and M222; 5-ton 6x6 Trucks M40, M41, M51, M52, M54, M55, M61, M62, M63, M64, M139, and M246: Poor idle eng perform, cause air enter eng gov, **D,** Aug 54

**TB Ord 574,** Plastic adher strippbl coat; descrip, applicat, equip used, **D,** Aug 54

**TB Ord 575,** Recess-hub, fabric-reinforc, abrasive disk-whls: Applicat, instruct for use, **O,** Aug 54

**TB Ord 576,** AOS-895-3, AO-895-4, AV-1790 series Cont engs: Clos fuel-tank-shutoff valve, **O,** Aug 54

**TB Ord 577,** Ord Vehcls: Repair, maint oil coolers, **D,** Sep 54

**TB Ord 578,** M46 Tank, M46A1; M47: Rebuild final drive assy, **D,** Sep 54

**TB Ord 579,** Initial set, adjst hydr-pneumatic recoil mech T47, M1, M17, M18, M19 series, **F,** Sep 54

**TB Ord 580,** Fuze, mech time super-quick, M500, M500A1, M501, M501A1: Charact, use, Sep 54

**TB Ord 581,** Ord vehcls wtr prf elec box, **D,** Sep 54

**TB Ord 582,** Lubr whl brngs, AAA, **F,** Sep 54

### MISCELLANEOUS

**SB 9-111,** 24- to 6-v conv kit, elec brk cntrl, trnsp vehcls, **F,** Sep 54

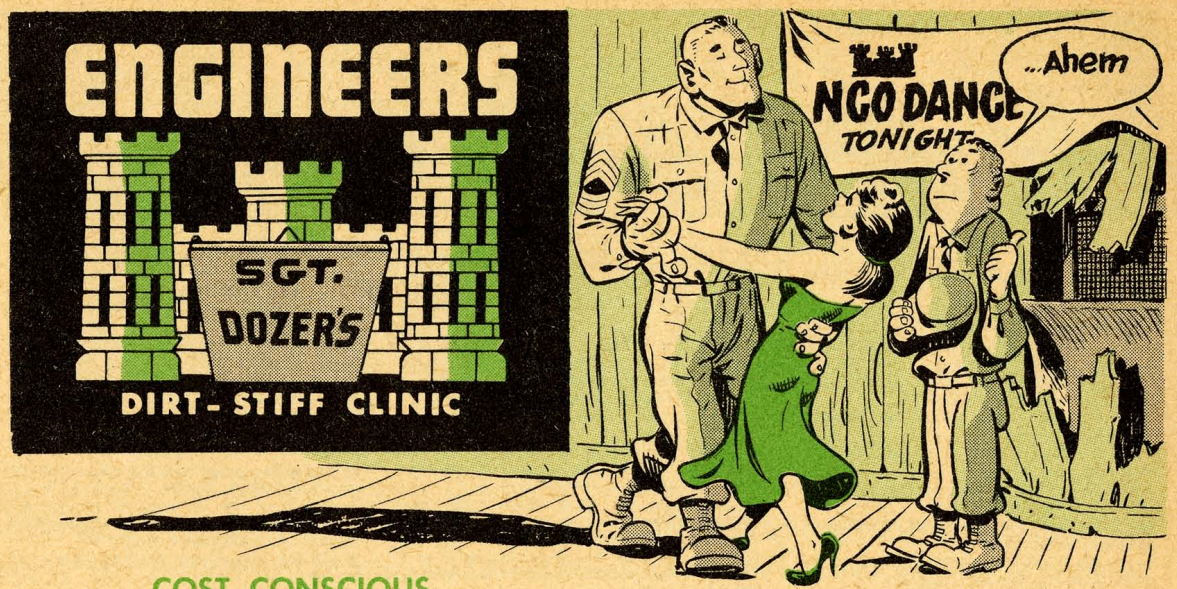
**LO 9-3046-6,** Gun, autmtic, 40-mm, M1A1 on carr, AA, 40-mm gun, M27, Aug 54

**LO 9-7014,** Tank, 120-mm gun, T43E1, Aug 54

**LO 9-7420,** Tractor, crgo, M8E2, Aug 54

**NOTE—On TB's and MWO's:**

**O**—Organizational Maintenance
**F**—Field Maintenance
**D**—Depot Maintenance




## COST CONSCIOUS

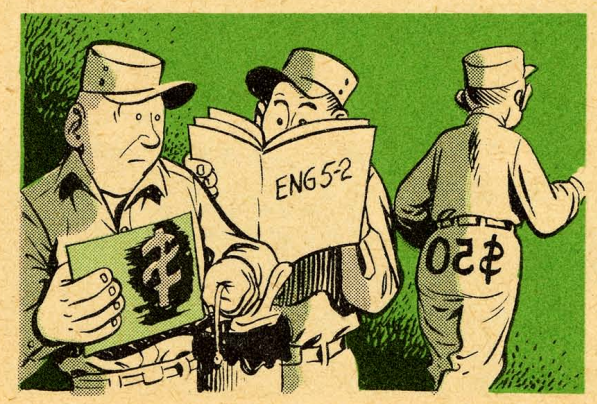
*Dear Sgt Dozer,*

*I've been looking for some authority that'll allow our unit to stencil the cost on the pieces of heavy Engineer equipment we use. Our outfit is economy-minded and I think it would help if the men were aware of the cost of the dozer, shovel or crane they operate. If it's OK to put the prices on the equipment, please tell me what I can use for authority and where I can find the prices of the various pieces of Engineer equipment.*

*W. C.*

Dear W. C.,

Your unit's rollin' along in high gear if you wanta stencil the cost on your equipment. There's nothin' that keeps you from doing just that providing, of course, your unit commander approves. It falls right in line with the Army's Cost Consciousness Program.




And for those prices on Engineer equipment, you find 'em in Department of the Army Supply Manual, Eng 5-2.

Sgt Dozer

## DATE TROUBLE

*Dear Sgt Dozer,*

*What's the dope on LO 5-9448 covering the 2-1/2-ton pole-type trailer that transports a triangulation tower? I've seen two identical copies of the LO, one dated 4 September 1953 and another dated 25 November 1953. They look exactly the same. What's the score?*

*Cpl J. W.*

Dear Cpl J. W.,

You're really a sharpie to catch that one. I've seen 'em both too. There's nothing on the one dated 25 November to indicate that it supersedes or replaces the one dated 4 September, but since it's

the latest, that's the one to use. You can requisition one of the later ones and bring yourself right up to date.

Sgt Dozer

## BOOM TIPS 'N TREES

*Dear Sgt Dozer,*

*Recently had an inspector lower the boom on us 'cause we paint our cranes' boom-tips yellow.*

*As far as we're concerned this idea is a proven safety feature, especially when working near power lines. He says it's unauthorized painting.*

*The yellow area extends only five feet down from the sheaves. It helps crane operators judge distance a lot better since the yellow tip stands out sharp and clear when the boom's aimed in line with trees, buildings or wires. An OD-painted boom at times naturally blends with dark objects which can result in dangerous confusion when gaging distances around the boom.*

*We can't find a regulation that says we can or can't use this sort of safety device. Can you quote us anything that'll cover us?*

*Sgt W. R. C.*

Dear Sgt W. R. C.,

Your CO and your post safety officer can get together on your suggestion and have it translated into a post safety regulation. And then, when the inspector complains, tell him to see AR 385-10 (Mar 53), para 3.

Sgt Dozer

***In Preventive Maintenance...***

***Any Man's Dish...***

***Is Every Man's Dish...***

Sharp maintenance poop, like a good hunting tale, never gets outdated.

Knuckle-saving tricks that are strictly "old stuff" to you, might lend a hand to your team-mates handling Engineer equipment up north of the boondocks and in other far-off places.

How's about shaking that stuff loose and sending it to Sgt Dozer so he can pass it along.

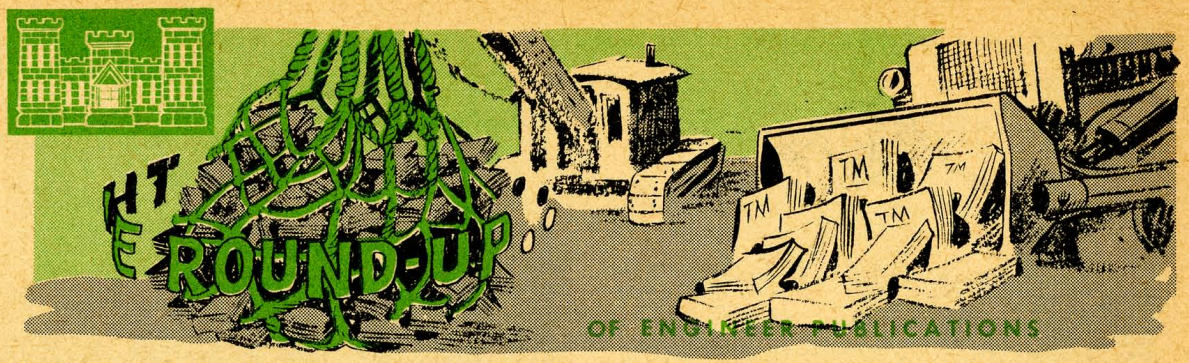
SEND IT TO:
SGT DOZER,
c/o P. S. MAGAZINE,
ABERDEEN PROVING GROUNDS, MD.

## MORE WATER

You can increase the amount of water you're movin' if you're using a 34-F140 Gorman Rupp pump. You see, this pump is a 4-in job reduced to a 2-incher.

Just get a larger suction hose—anything between 2 and 4 inches—and a discharge hose to match. Then change the pipe reducer on the pump to match the hose you're gonna use. Hook 'em up and you're ready to roll.

And you don't hafta worry about the horses in the engine. They can handle the increase—up to 4 inches.




### TM's

**5-1155,** Kettle, asph, skid-mtd, 750-gal, Standard Stl Mod ESMP, Jan 54

**5-3040-B,** Tractor, crawl type, dsl-dr, (28,100 to 38,000-lbs drawbar pull) std Caterplr D-8, 78-in gage (tractor Serial No. 2U14765 and up), Dec 53

**5-5397,** Inst manual for LeRoi 2-stg, air-cool air comp, Mod 315D2, Nov 53

**5-2025,** Well-drlg mach, rtry type, skid-mtd, gas-dr, Failing Mod 314C, Jan 54

**5-4054,** Saw, circ, woodwkng, statny, std o'head arm, mtr-dr, 115 or 230-v, 60-cyc, 1-ph, 2-hp, 12-in bld, DeWalt Mod GRK, Jan 54

**5-5234,** Engine, gas, Jacobson Mod J-100, Jan 54

**5-5235,** Engine, gas, Willys-Overl'd Mod 807532, Jan 54

**5-8016,** Motor, outboard, 22-hp, Evinrude Speeditwin Mod 6041 Serial Nos. thru 05000, Jan 54

### TB's

**5-9921-1,** Prev Maint Serv: Take-off, pwr, 2 speeds and rev, Gar Wood assbly 74Y6001L, Feb 54

**5-1204-1,** Prev Maint Serv: Scraper, rd, mtrzd, cble-oprtd, 2-cu yd, airborne, tilt dozer, Le Tourneau Mod AD, LeTourneau Carryall Model Q, LeTourneau Tournapull Mod D-4, Jan 54

**5-4083-1,** Prev Maint Serv: Digger, clay, pneu, 25-lb class, 7/8-in hex x 2-3/4-in chuck, Worthington Mod W-14, Feb 54

**5-5051-1,** Prev Maint Serv: Gen set, port, gas-dr skid-mtd, 5-kw, 120/208 v, 1- and 3-ph, 60-cyc, Onan Model 5ABG-4M, Feb 54

**5-5065-1,** Prev Maint Serv: Comprssr, air, truck-mtd, gas-dr, 210-cfm, LeRoi Model 210G1, Feb 54

**5-5094-1,** Prev Maint Serv: Comprssr, air, diving aprtus, gas-dr, skid-mtd, 16-cfm, twin opposed, complete with manifold outlet assbly for diving, Johnson Model 252-R (less eng), Feb 54

**5-5394-1,** Prev Maint Serv: Comprssr, air, truck-mtd, gas-dr, 210-cfm, Davey Model 210-WD-TS (less truck and less eng), Feb 54

**5-9032-1,** Prev Maint Serv: Trlr, full, low bed, 8-ton, Fruehauf Mod CPT-8, special, Feb 54

**5-1585-1,** Prev Maint Serv: Bulldozer, rigid, cble-optd, inside tractor frame mtg, 17,100 to 24,000-lb drawbar pull trctr, for Caterpillar D7, LaPlant-Choate Models BN76F, BN76R, BN78F, and BN78R, Jan 54

**5-5150-1,** Prev Maint Serv: Gen set, port, dsl-dr, skid-mtd, 8-kw, 110/220 v, 1-ph, 60-cyc with control panel, Witte Eng Wks, Mod MD-282, Jan 54

### LO's

**5-4136,** Saw, band, wdwrkng, mtr-dr, 3-hp, 220-v, 3-ph, 60-cyc, Northfield Mod 32-in, Feb 54

**5-5038,** Gen set, dsl-dr, stnry, 300-kw, 2400/4160-v, 3-ph, 4 wire, wye-connctd, conv to 2400-v, 3-ph, 3 wire, delta connctd, 60 and 50 cyc, Caterpillar Model D-397 (less eng), Feb 54

**5-5201,** Engine, gas, Cont Mod F226-198, Feb 54

**5-5317,** Gen set, elec, port, gas-dr, skid-mtd, 7-1/2-kw, 120/208-v, 1 or 3-ph, 400-cyc, 2 or 4 wire, Master Vibrator Mod EG-105, Feb 54

**5-9098,** Plow, snow, strght blade, with wng, one-way type, trk-mtg, 4-ton, 6x6 or 6 ton, Burch Corp Ross Mod R-23, Jan 54

**5-9028,** Lubrctr, trlr-mtd, Stewart-Warner Mod 2430, Feb 54

**5-9060,** Crane, trctr-optg, whld, 4000-lb cap at 3-ft 3-in rad, 20-ft boom, Le Tourneau Mod M-20, Feb 54

**5-9427,** Pump cent, for pet, gas-dr, skid-mtd, 2-stg, 715-bph at 555-ft head to 2000-bph at 275-ft head, Barnes Mod CE6P2, Feb 54

**5-9443,** Trailer, dump, airborne, 4-whl, hyd-optd, 11 to 13-cu yd for trctr, air transptble, ph 1, whl type, 14,025 to 20,000-lbs drawbar pull, with wt trnsfr device, MRS Mod 110 AGW, Feb 54

**5-9597,** Conveyor, drag type, car unldr, gas-dr, whl-mtd, 18-ft long, 75-tph cap, Haiss Mod 484 PM, Feb 54

**5-2017,** Pump, sump, pneu, 2-1/2-in dis at 150-gpm at 100-ft head, Ingersoll-Rand Mod 35, Jan 54

**5-2120,** Pump, cent, gas-dr, base-mtd, 2-in dis, 55-gpm at 50-ft head, Barnes Mod 7M (less eng), Jan 54

**5-3471,** Truck, fire, pwrd, pmpr, cls 750, 4x2, 750-gpm, Mack Mod ZD, Jan 54

**5-4014,** Sharpeners, chain saw, mtr-dr, 110-v, Disston Mod E2-C5, Jan 54

**5-4016,** Saw-tble, tilted type, port, gas-dr, 16-in blade, skid-mtd, Const Mach Co Mod Pwr Sawer (less eng), Jan 54

**5-4120,** Grinder, elec, port, 110-v, Univrsl Mtr, Ind Pneu Mod U-60, Jan 54

**5-4137,** Saw, table, tilted type, port, gas-dr, skid-mtd, 18-in blade, C. H. and E Mfg Co. Mod 32 A, Jan 54

**5-4492,** Mower, lawn, pwr, rotating reel, whl dr, 30-in cut, Motomower Super-Detroit, Jan 54

**5-9087,** Sweeper, rtry, trctr mtg and pwrd, 1-way swpng, 30-in x 7-ft, brush, for case D1 tractor, Little Giant Mod SC-100, Jan 54

**5-9163,** Htr, gas-burn, with blwr, 110-v, 60-cyc, 5000-cfm, thermostat cont, 60,000 BTU ph, Hunter Mod UH-58-SC-1, Jan 54

**5-9255,** Trk, grbge, compact type, 15-cu yd cap, 5-ton, 4x2 with 48-3/4-in tailgate ldng door, Gar Wood Mod "Load Packer" (body only), Jan 54

**5-9292,** Power control unit, cble optg, rear mtg, 2 drum, 14,025 to 20,000-lb dbp trctr, Bucyrus Erie Mod P25M, Jan 54

**5-9304,** Power control unit, cble optg, rear mtg, 2 drum, 12,100 to 17,000-lbs drawbar pull trctr, Allis-Chalmers, HD-7W, Heil Mod LD-2, Jan 54

**5-9452,** Trlr, full, low bed, 8-ton, Winter Weiss Mod S4S8, Jan 54

**5-9578,** Electromagnet, rd, with DC gen, gas-dr, trlr-mtd and trk-mtd, for mtg on 2-1/2-ton, 6x6, cargo trk, Stearns Models 18-in x 36-in and 20-in x 72-in with trlr (less trk), Jan 54

**5-5327,** Gen set, port, dsl-dr, skid-mtd, 50-kw, 120/208-v, 3-ph, 60-cyc, w/remte cont pnl, (PE-215-F) Balinders Mod 760, Jan 54

**5-5367,** Gen set, port, gas-dr, skid-mtd, 18.75-kw, 127/220-v, 3-ph, 60-cyc, Kato Mod 52 MPK 4 (less eng), Jan 54

### ENG MWO's

**1042-1,** Htr, asph, Cleaver Brooks Mod DS

**1077-1,** Htr, asph, Bros Mod SG-41-T

**1142-1,** Roller, rd, Buffalo-Springfield Mod KT-16

**1520-1,** Grdr, rd, Adams Mod 511

**5060-1,** Comp, air, LeRoi Mod 105GA

**5120-1,** Wldr, elec arc, Hobart Mod GR-300-S

**9508-1,** Crane-shvl, Thew-Lorain Mod E-6620

**9517-2,** Crane-shvl, Gar Wood Buckeye Mod M-20-A

**9452-1,** Crane-shvl, pwr unit, revlvng, crwlr, 30-ton cap at 12-ft rad, 1-1/2-cu yd, Harnischfeger Mod 655A, dsl or gas-dr, Mar 54

### ENG 7 & 8's

**9304,** Power control unit, cble-optg, rr-mtg, 2-drum, 8600 to 12,000-lb drawbar pull tractor for International TD-9, Heil Model LD-2, Mil-P-17078, type I, cls B, size 2 (78-6630.760.220), Jan 54

**1580,** Bulldozer, tilting, cable-optd, 17,000 to 24,000-lb drawbar pull trctr for Caterpillar D7, Le Tourneau Mod XD7 (78-2233.770.704). Bulldozer, tilting, Cble-optd, 17,000 to 24,000-lb drawbar pull trctr for Caterpillar D7, Le Tourneau Model XD7-B (78-2233.770.707), Jan 54

**5051,** Gen set, elec, port, gas-dr, skid-mtd, liq-cooled, Mil-G-10285, type II, class A, 60-cyc, 120/208-v, 1 and 3-ph, 4 wire, 5-kw, Onan Mod 5ABG-4M-379A (17-4780.525.555). Gen set, elec, port, gas-dr, skid-mtd, liq-cooled, Mil-G-12373, type II, cls A, 60-cyc, 120/208-v, 1 and 3-ph, 4 wire, 5-kw, Onan Mod 5ABG-4M-377A (17-4780.524.550), Jan 54

**9051,** Semitrlr, low-bed, rr-ldg, w/o dolly, 25-ton all makes and mdls (Eidal Model) (78-7475.525.100), Apr 53

**9428,** Pump, cent, for pet prod, gas-dr, direct-connctd, flexible, sngle-stg, 6-in, 250-lb flanged cplng, self-prmng, skid-mtd, dis and suction, with grooved type adapters, 350-BPH at 215-ft head to 1600-BPH at 100-ft head at 1800-RPM, Gorman-Rupp Model 06-H-260 (11-4980.100.400), Jan 54

**3443,** Trlr, dump, air-transprtbl, ph 1, 4-whl, hyd-optd, 11 to 13-cu yd, for trctr, air-transportable, whl-type; 14,025 to 20,000-lb drawbar pull, with wt transfer device, MRS Mod 110AGW (78-8955.350.500), Jan 54

**1584,** Angledozer, cble-optd, 24,000 to 32,000-lb drawbar pull trctr, EST-2293, for Caterpillar D8, La Plant-Choate Mod R82 (78-1290.980.182), Oct 53

### ENG 7, 8 & 9's

**1071,** Paver, conc, Foote Mod 34-E

**1127,** Distrbtr wtr, Butler Mod 6743

**1129,** Distrbtr, wtr, Vic Mod 73

**1207,** Scrpr, rd, Heil Mod 2C-500-M

**2013,** Pump, cent., Gorman-Rupp Models WS12-10 & 1205A

**2065,** Distillation ut, Badger & Sons Mod

**2114,** Pump, cent., John Reiner Mod GP-55

**3302,** Trctr, air transprtble, M-R-S Mod 150

**4096,** Drill, pneu, for stl, Chicago Pneumatic Mod D

**5023,** Gen set, Buda Mod 8DCS-1125

**5027,** Tank, asph, Vic Model

**5031,** Gen set, Hollingsworth Mod CE-51-DC/WK2

**5093,** Comp, air, Amcn Brake Shoe Mod GE-331-XA

**5129,** Wldr, elec arc, Hobart Mod GL-218-S

**5260,** Gen set, Hollingsworth Mod CE-100AC-WK4

**5310,** Gen set, Detroit Dsl Mod 4907A

**5312,** Gen set, Hercules Mach Mod HC-30-400W

**5314,** Gen set, Cummins Mod, NHRSGA-601-100

**5325,** Gen set, Atlas Aircrft Mod 7A1

**5327,** Gen set, Bolinders Mod 760 (Sig Corps PE-215F)

**5333,** Gen set, Davidson Elec Mod DEC-30GCK

**5336,** Gen set, Intnl Dsl Elec Mod (Sig PE-207B)

**5338,** Comp, air, Amcn Brakeshoe Mod GE-320

**5376,** Gen set, U.S. Mtrs Mod (Sig Corps PE-79C)

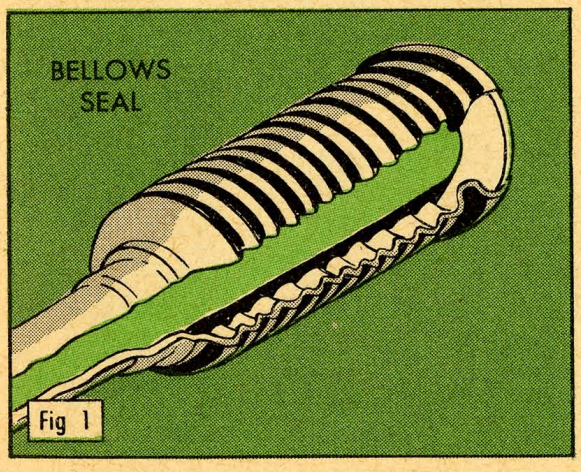
**5378,** Gen set, U.S. Mtrs Mod (Sig Corps PE-78G & H)

**5385,** Gen set, Consldtd Diesel Mod 1780

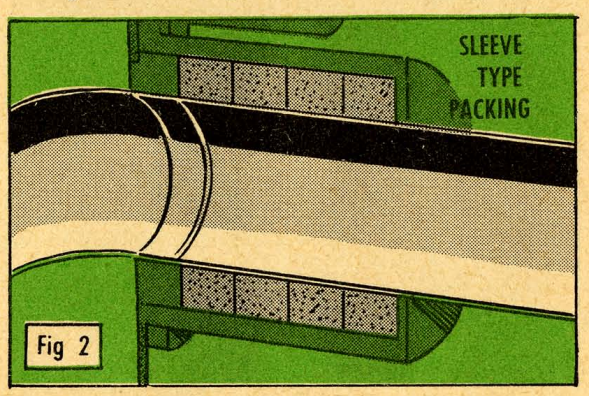
It's a wise operator who regularly checks the heater tubes and manifold connections on his diesel engine for leaks. It's easy to find an air leak there. And if it's repaired right away, the engine'll get many hours of added life.

Exhaust gases from the gasoline starting-engine run through a thin tube inside the diesel engine inlet manifold and give off heat. This shoves the air temperature upward and makes starting faster and easier. But this section of the exhaust has to be completely shut off from the diesel engine inlet air, because any small leak or crack in the manifold connections could let through unfiltered air and cause wear to the cylinder liners, pistons or rings.

A gasket can't be used at both ends of the heater tube because of the expansion and contraction from the temperature changes. A bellows (Fig 1) accounts for expansion in some engines,




while other heater tubes have sleeve-type packings (Fig 2) at one end. Either one provides a good seal.



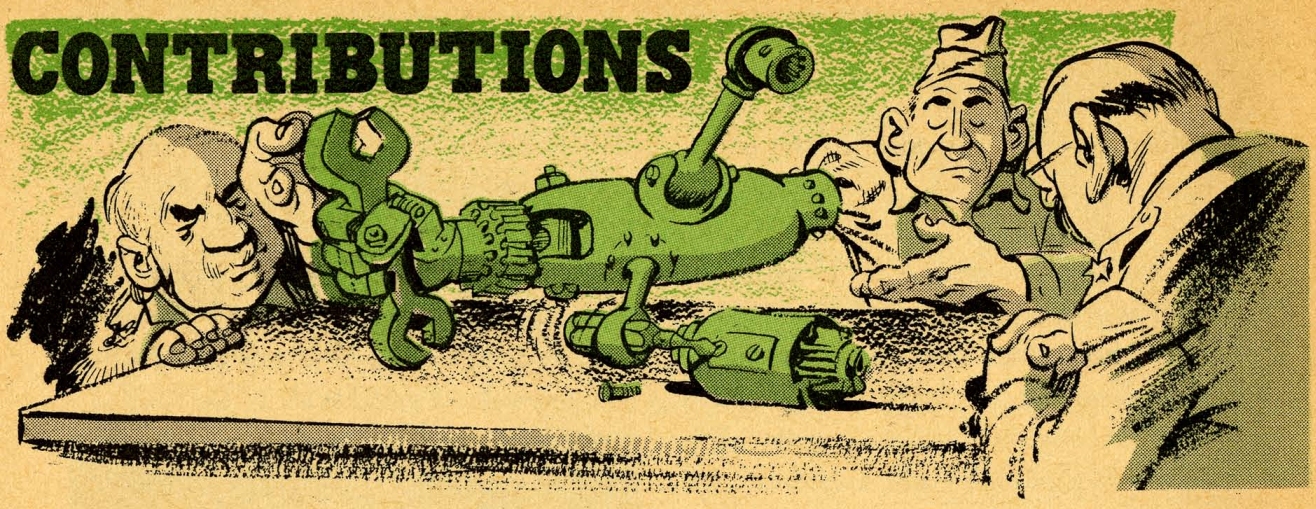

Here's how you check the inlet manifold heater for leaks:

RUN THE DIESEL ENGINE AT HIGH IDLE SPEED WITH THE STARTING ENGINE STOPPED, AND HOLD A SMALL PIECE OF PAPER OVER THE EXHAUST STACK OF THE STARTING ENGINE.

If the exhaust stack draws the paper in, or blows it out, that's the sign of a leak in either the heater tube or seal. The direction depends on whether the diesel engine has a blower. Since a blower puts air in the manifold under pressure, the paper would be forced from the exhaust stack in case of a leak.

You ought to check this often. Takes just a minute. Once you find a leak, have it fixed quick. You'll be helping your diesel grow to a ripe old age.

# CONTRIBUTIONS



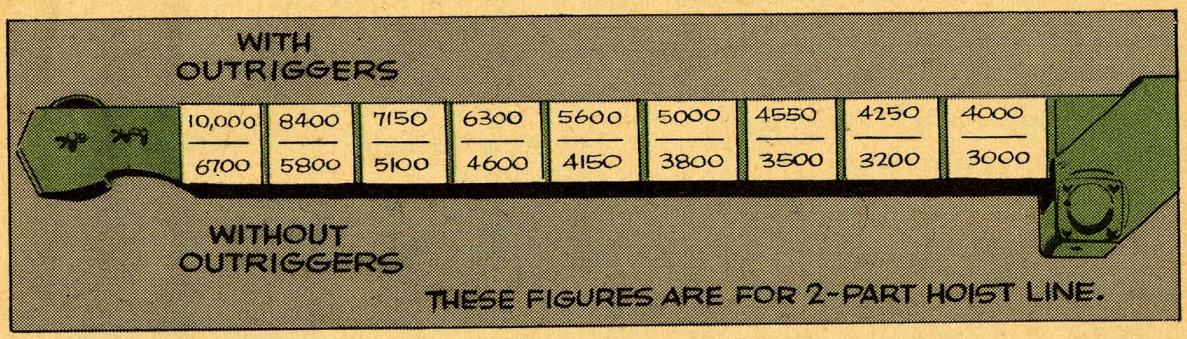
## BOOM MARKER

Dear Editor,

No need for guessing how far our M62 wrecker's boom is extended. Just dress right and cover down.

We extend the boom all the way and paint a vertical line on it where it meets the shipper's bottom. From that line, we mark off every foot of the boom with parallel white lines. And at each foot we paint the weight that can be lifted with and without outriggers as stated on the operator's Safe-Load Chart.

**MSgt W. T. Wilson**
**Aberdeen Proving Ground, Maryland**

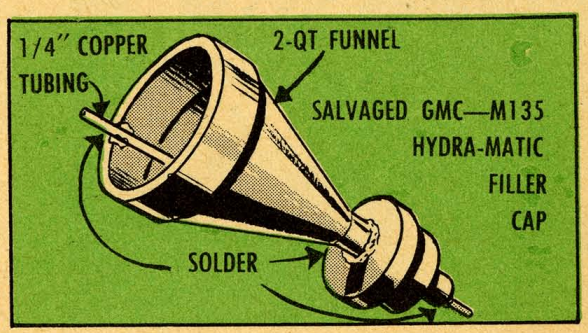



## GURGLE GURGLE—SLURP

Dear Editor,

We've got a string of M135 and M211, 2-1/2-ton trucks around here. It took two men a helluva long time to change their Hydra-Matic transmissions to winter or summer weight oil—until we started using our time-saving guzzler shown here.

To make it, we got a funnel of about 2-qt capacity and took a filler cap from a salvage transmission. Then we soldered a 1/4-in copper tubing down against the funnel's inside so that 2 inches stuck out of both the spout and the



top. After that, we drilled a hole in the cap big enough to hold the spout snugly, and soldered them together. That was it.

With the rig screwed onto the transmission filler-tube, the lube goes down smooth, with the displaced air going up the tube. And nobody has to hold the funnel while you pour.

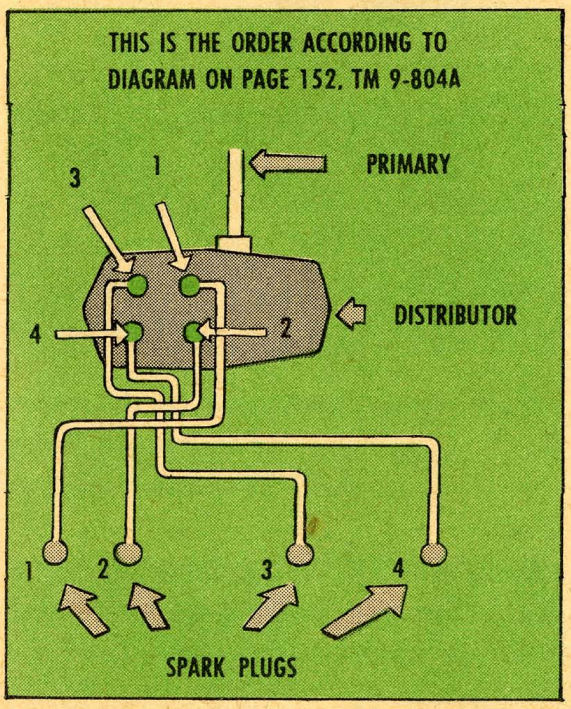
**MSgt Paul L. Carlyle**
**Missouri National Guard**

*(Ed Note—Sounds good. A solder-free dimple down the spout where it goes into the cap, can substitute for the tubing—if you no got.)*

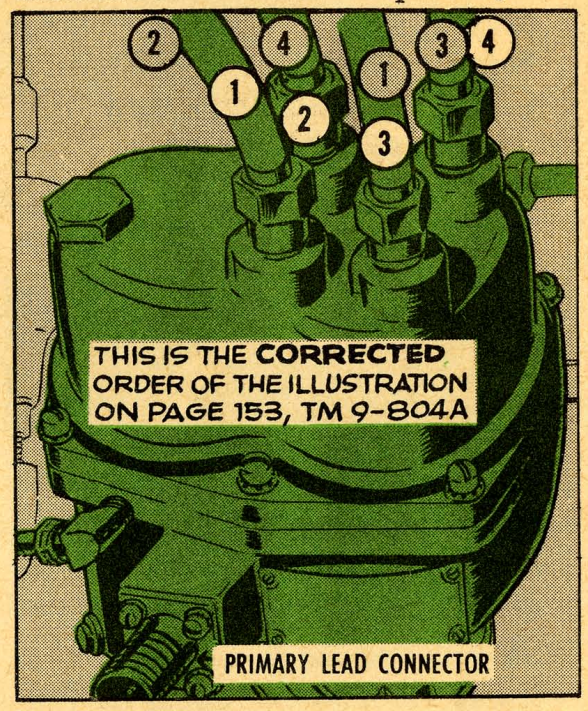
## ORDER OUT-OF-ORDER

Dear Editor,

We've found that the photo of the M38A1's ignitor and ignition cables, Fig 57, page 153, in TM 9-804A doesn't agree with the firing diagram on page 152 of the same TM.




The guy who put the labels on must've slipped a cog. It should show the No. 1 cylinder cable going into the distributor outlet **nearest** the primary lead




connector (lower left as the ignitor fits the truck), and the rest of the cables connect 1-3-4-2 around counter-clockwise.

**PFC Albert Petrola**
**APO 20, San Francisco**

## STATIC GROUND-SPRING

Dear Editor,

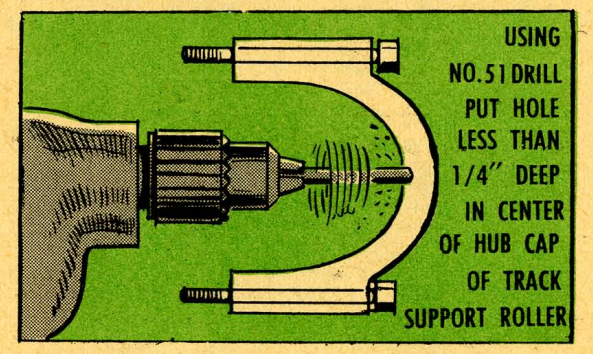
Here's a simple fix for static ground spring trouble in the light tank family (such as M41, M42, M8E1, etc.) track-support roller.

As is, when you assemble the cap and spring to the roller, the spring has to be placed on the end of the spindle with the loop on the large end of the spring sticking in one of the slots in the bearing adjusting-nut.

About half the time the spring won't hang straight; so, when the cap's put on,

the pig-tail on the spring won't ride in the center of the raised portion of the cap like it should. This causes the spring to bend or break—and it can get wedged in the bearing, with unhealthy results.

For a practically fool-proof method of getting the spring in the right place, take a No. 51 drill and put a hole 1/4-in deep in the center of the cap. The pig-tail on the spring can then be inserted




in the hole first and the loop guided into a slot on the adjusting nut as the cap's put in place.

You've got to be careful: Don't drill the hole too deep and ruin a hub-cap.

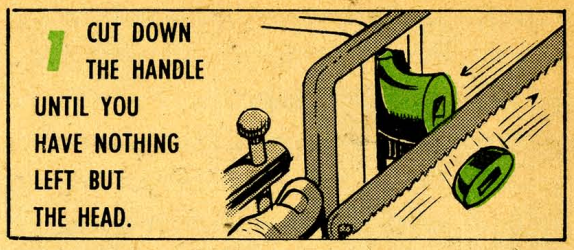
**Hubert C. Mills**
**Ft Lewis, Washington**

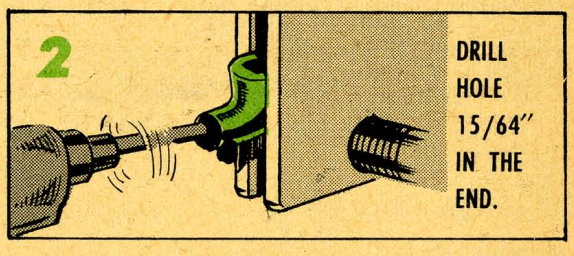
*(Ed Note—1/4 inch is too much—wouldn't leave enough thickness in the cap. Make it 1/8 inch, and you're OK. Few things are completely fool-proof. But your fix—and a little care—should keep those springs sprung in the right place.)*

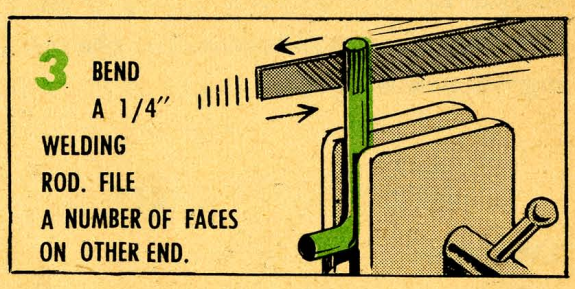
## IT'S A SNAP

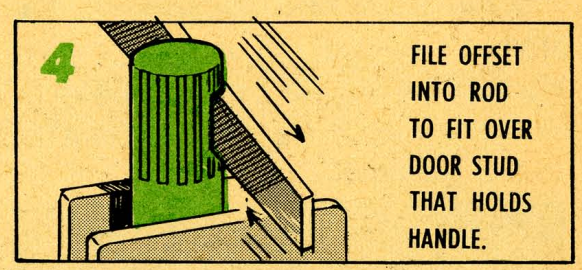
Dear Editor,

Those window regulator handles on the M37's (and others) may snap off now and then. When we can't get a quick replacement we do this:



Lets you get your glass on the move.

**Pvt Donald Finley**
**APO 201, San Francisco**

*(Ed Note—This may be OK, if you're really hurting for a window handle, but have you sent in a UER to the Chief of Ordnance?)*

## Conversion (24/6-V) and brake kits

If you've been looking for those 24/6-volt conversion kits and electric brake-control kits for transport vehicles just take a gander at SB 9-111. It gives the dope you need.

## Muscles last longer

It's easier turning if you use OE 10 lube in your 5-ton truck's steering-gear's hydraulic-reservoir. Watch for the following dope in LO 9-8028: above +32° F, OE 10; +40° F to —10° F, OE 10; 0° to —65° F, OES.

## They gotta be right

If the rounds from your 155-mm howitzer aren't falling where you're calling, could be the equilibrators are crossing ya' up. They have to be just so-so before ya' can make with the target. TM's 9-331A and 331B tell ya' how to keep 'em going right.

## Mail it—direct

Remember that you fill out your Unsatisfactory Equipment Report (UER) Form 468, and mail it direct to Chief of Ordnance, ATTN: ORDFM, Washington 25, D. C.—just like it says in SR 700-45-5.

## It's been upped

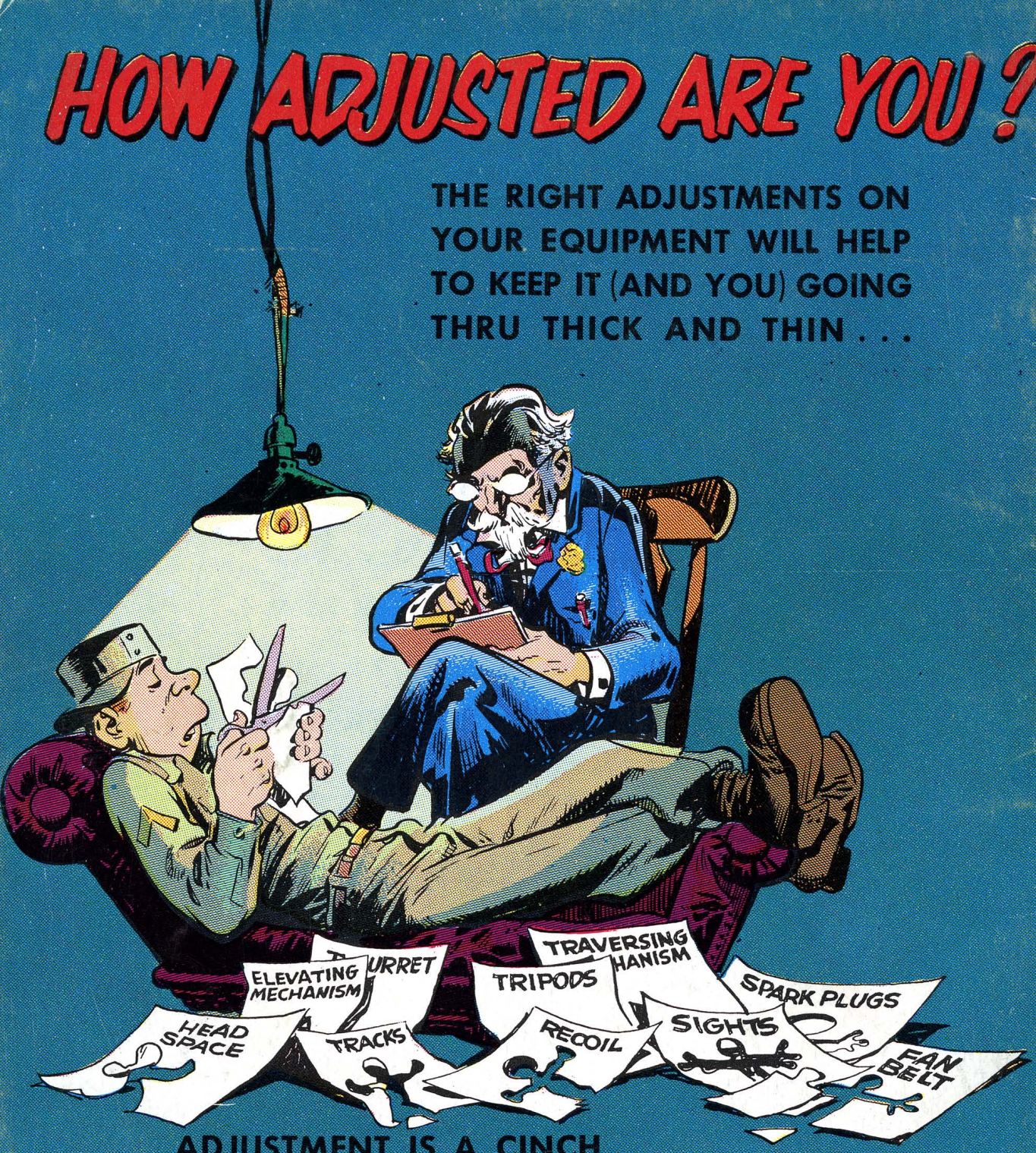
When you adjust the clearance of the bolt in the M62 air-declutching linkage make it 1/4 inch. A little more never hurts. The clearance was set forth as 1/8 inch in PS 22 but should be changed to read "1/4 inch." This change will appear in the next revision of/or change to TM 9-837.

## Gotta soft grip?

If the plastic grip on your M1 bayonet gets soft in the sunlight, better turn it in for another type handle. Some plastic grips are inflammable and don't hold up under heat. And remember, no bayonet handles go into vapor degreasers.

# HOW ADJUSTED ARE YOU?

THE RIGHT ADJUSTMENTS ON YOUR EQUIPMENT WILL HELP TO KEEP IT (AND YOU) GOING THRU THICK AND THIN . . .




ADJUSTMENT IS A CINCH . . .

AND YOU DON'T NEED A HEAD DOCTOR

Just Thumb Through Your Equipment's Technical Manual

It's All There—Turns, Clicks, Notches, Inches.

SEE YOUR TM TECHNICAL MANUAL TODAY AND GET ADJUSTED